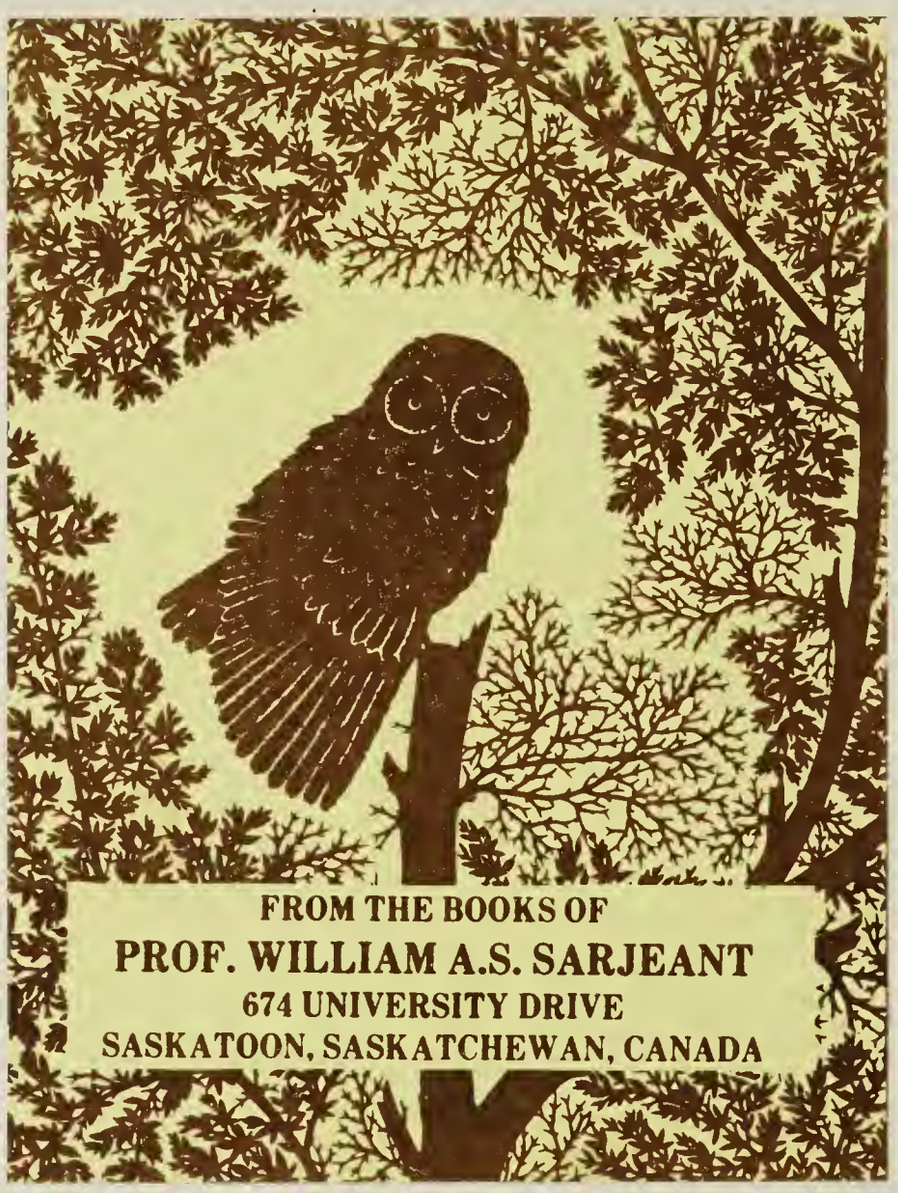
FROM THE BOOKS OF
PROF. WILLIAM A.S. SARJEANT
674 UNIVERSITY DRIVE
SASKATOON, SASKATCHEWAN, CANADA

William A. S. Sargent

blue jay

March 1977

EDITORIAL

As we enter our thirty-fifth year of publication, perhaps this is a good time to reflect on how the *Blue Jay* came into being and what kind of journal it has become. An article in this issue tells how it got its name, and that it began as a birdwatcher's newsletter. It has grown through the years to become a respected journal of natural history and conservation.

When the idea of the *Blue Jay* was first proposed, amateur naturalists across the prairies responded with enthusiasm. They were delighted to have this opportunity to share their personal observations and to seek further information. Before long professional biologists were using the journal too, to report on their studies. It is to the credit of previous editors that the journal has managed to cater to both of these interests.

We want to encourage the reporting of natural history observations by many kinds of people, professional and amateur, whether big items or small. We also want to establish articles that deal more comprehensively with the interrelationships of different organisms, and the place of man in the total environment. To maintain the quality of the *Blue Jay* we need the support of our readers; in addition to their contributions we need their opinions on the material we publish. We will continue to place a priority on involving members of our Society, both by printing their material and searching out other material that may be of special interest to them.

From time to time, therefore, we will feature articles such as the one in this issue on a land use policy for Saskatchewan. These articles may be controversial, in that some members will disagree with the viewpoints expressed, but we believe we should raise such issues for debate. In future we hope to look at the lack of parks policy for Saskatchewan, the future of the Qu'Appelle Valley, and the whole energy question and how it relates to conservation.

This issue has been put together with the help of many people: both those who contributed articles, notes and letters, and those who have agreed to serve as associate editors and editorial assistants.

Regular readers will notice some changes in this issue of the *Blue Jay*. We have a new printer, a new type face that should be easier to read, redesigned titles, and some changes in layout. We hope our readers will let us know how they react to these changes.

BLUE JAY

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Editor: Gary W. Seib

Associate Editors: Margaret Belcher, J. Bernard Gollop, George F. Ledingham.

Editorial Assistants: Shirley Jowsey, Barbara Shourounis, JoAnn Skenderovich

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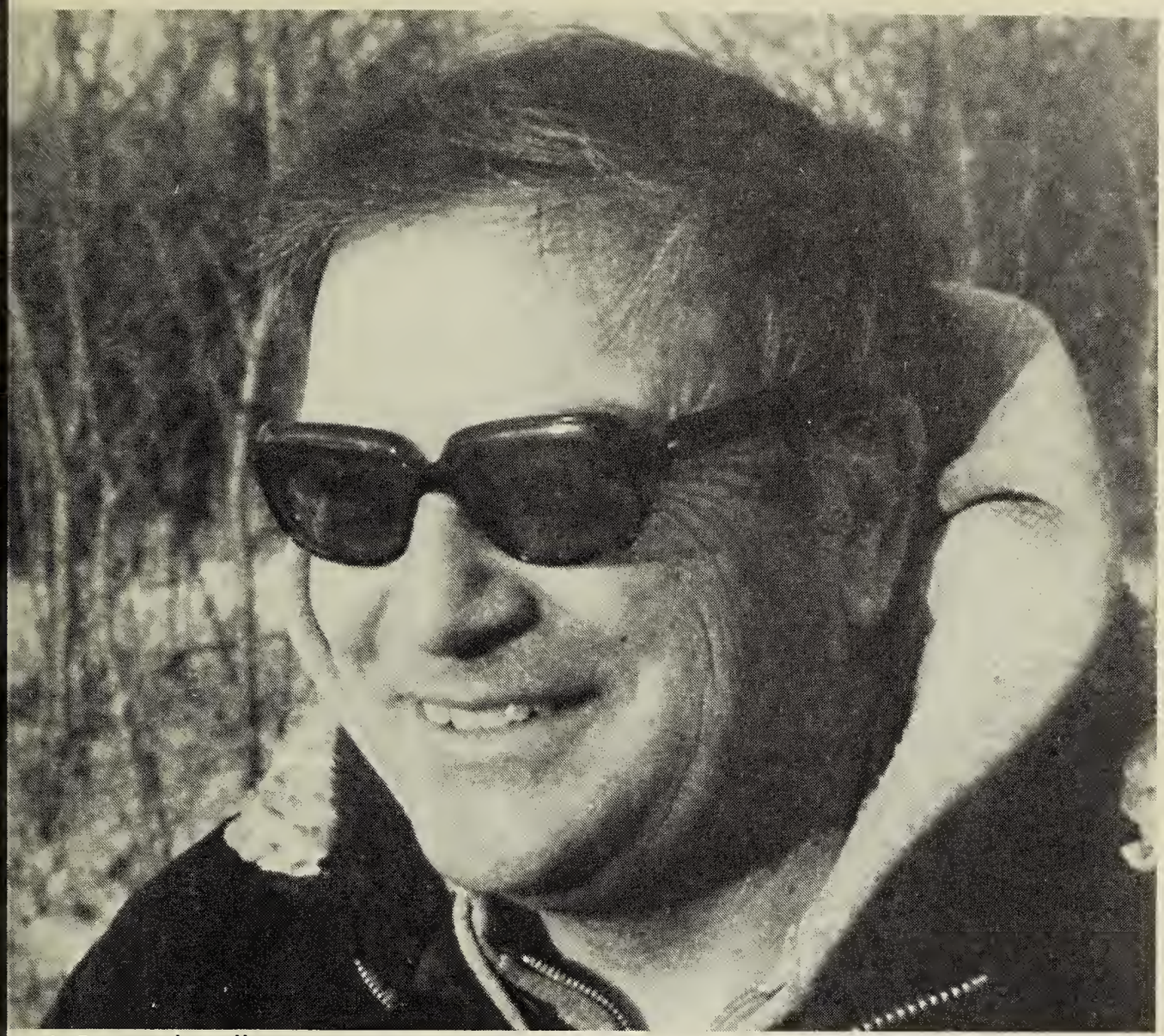
The classes of membership in the Society are as follows: Regular $5.00; Sustaining $10.00; Patron $25.00. Sustaining and patron memberships include the regular fee plus a donation for which a receipt is available for income tax purposes, upon request. Bulk orders (minimum of five to one address) are available to junior club members and to educational institutions at the rate of $5.00 for the first subscription and $2.00 for each additional one.

REPRINTS

Requests for quantities of reprints of any article in the *Blue Jay* should be sent to Centax of Canada, 1440 Scarth Street, Regina, Saskatchewan, within one month of publication. Contributors wishing a few extra copies of the current *Blue Jay* may get them at cost. Requests for these should be made to the Editor when material is submitted for publication.



Dr. J. Bernard Gollop

A TRIBUTE TO J. BERNARD GOLLOP

M A. WEDGWOOD, 610 Leslie Avenue, Saskatoon, Saskatchewan

Upon completing the December, 976 issue, Dr. J. Bernard Gollop tepped down as editor of the *Blue* ay. It is a pleasure to thank Bernie for he service he has given our Society nd for the contribution his ditorship has made to natural istory.

The editorship of the *Blue Jay* takes nany hours of time and is otherwise emanding. All this Bernie knew hen he was asked to accept the osition. Before committing himself e thought it over thoroughly and alked with Dr. George Ledingham, ho was completing 16 years as ditor, and with Miss Margaret elcher, Dr. Bob Nero, Dr. Stuart ouston and others connected with the journal in various capacities. Once having agreed to a term of service, Bernie applied himself to the task the only way he knows how — with complete dedication.

A great deal of work goes into the production of a journal like the *Blue Jay*. The problems are compounded when the publisher is an organization of volunteers like the Saskatchewan Natural History Society, where only the printing is done by a commercial agency with trained personnel. All the myriad other tasks have to be performed by Society members and their friends. The responsibility for planning and coordinating the operation and many of the actual tasks — are taken on by the editor. He makes it all

go. Bernie tells us that he has spent 50 to 60 hours on each issue.

Bernie put his heart into his work, as well as his time. He often used to stop at our house and show us a new *Blue Jay,* hot off the press. If something was not to his liking, he would say so. From the way he talked we could sense he was disturbed, and blamed himself. It hurt him to fall short of his ideal.

As editor, Bernie engaged in the perennial argument about what the *Blue Jay* should be. He delighted in debating whether the format should be changed or not, whether there should be more conservation articles or more articles on natural history, more scientific writing or more popular writing, more photographs or fewer, more regional articles or more local items, etc., etc. At the beginning, he sent out a questionnaire to all readers, and he guided himself as much as possible by the interests they indicated in their responses.

From its inception the *Blue Jay* has contained items on conservation. Yet only in the past two decades have feature articles on ecology and the environment appeared with any frequency. Bernie aimed to strengthen this side of the journal, a timely move as knowledge of these subjects was expanding and public awareness growing.

At one time the flow of small items sent in by readers had pretty well dried up. We missed these letters containing brief notes on natural history observations on the prairies. When Bernie took over, he and I discussed the value of these members' contributions and ways in which their participation might be encouraged. The increasing frequency with which these notes and letters have been appearing in recent issues in gratifying.

Bernie lost one battle. In his last issue as in the first, the major section was on birds, which is not what he wanted. He strongly believed that all natural history subjects should be treated, and he tried hard to broaden the coverage. In many areas he was successful. But birds still predominated. Perhaps this was inevitable since the majority of our authors and our readers seem to be interested in birds.

Every editor dreams of being deluged with a great quantity of unsolicited material on all sorts of subjects written in a finished and readable style! He can then happily be selective, accepting articles which meet certain standards and philosophical criteria and rejecting others which do not. However, in reality not enough articles are submitted and some must be solicited. In this the editor has to exercise considerable tact, for it is difficult of ask for an article and then request that part of it be rewritten. Yet this is often necessary, if the journal's standards are to be upheld. Bernie was able to do this with some success because authors recognized his integrity and sincerity, and knew that he set as high a standard for himself as he did for them.

Another dream of Bernie's could not be realized. From the beginning he wanted colour photographs in the *Blue Jay,* but the financial position of the Society made it impossible to introduce them. Colour photographs would have increased publication costs by at least $1,200 a year and the membership fee would have had to be increased. However, Bernie can be determined when he wants to be. The December issue in 1975 had a centre spread in full colour. How did he swing that? A glance at the Society's financial statement will show an item entitled "Honoraria". Bernie saved each quarterly honorarium paid the editor, and blew the whole sum on a colour photograph for one issue!

Gary Seib, our new editor, tells me that Bernie has agreed to continue working for the *Blue Jay* by helping edit the bird material. I am happy to learn this as we, the readers, will continue to profit both from Bernie's editorial experience and from his knowledge of ornithology. When a trained natural scientist contributes his services to a society composed mainly of amateurs, we all benefit.

LAND USE POLICY FOR SASKATCHEWAN

GEORGE F. LEDINGHAM, 2335 Athol Street, Regina, Saskatchewan S4T 3G4

INTRODUCTION

Five hundred million people in the world are malnourished and the demand for food will increase during the next 25 years because populations are increasing and because there is a worldwide degradation of the land. More marginal land is being pressed into crop use, forests are rapidly being removed for fuel, and deserts continue to advance. By the end of this century neither the United States nor Canada will be able to spare any food for export.[8]

In Canada crop production is centred in the prairie provinces where the growing season is short, organic matter is limited and precipitation is sparse. The main crops are hard red spring wheat and other small grains. Canada produces only about 3% of the wheat grown in the world. In yields of wheat per acre Canada ranks low and is gradually falling further behind other wheat producing countries. After the Second World War Canada ranked twentieth in yield of wheat per acre; today Canada ranks twenty-eighth. Since the war other major wheat producers have increased wheat yields per acre at rates of 0.5 to 1.4 bushels per year, whereas Canada's average yearly increase in wheat production has been only 0.2 bushels per acre.[3]

The total area of Saskatchewan is 161 million acres but 8.8 million acres of this is covered by lakes, rivers and other bodies of water. Over one-third of the total area lies in the Precambrian Shield where there is very little soil that could be used for farming. In southern Saskatchewan, which produces 62% of Canada's wheat, there are 46,400,000 acres under cultivation.[12] This means that 30% of all Saskatchewan is already under cultivation (the total amount of cultivated land in the world is only about 11%).

Obviously land is needed for the growing of food, but there are other needs and uses for land. In addition there is now a universal awareness of the natural environment and of the necessity to preserve significant amounts of that environment. In this brief on land use in Saskatchewan the naturalists' point of view will be given and it will be emphasized that land use policies must incorporate sound principles of ecology.

SASKATCHEWAN NATURAL HISTORY SOCIETY

The Saskatchewan Natural History Society is a nonprofit organization containing over 2,500 members and their families. The members include people from every profession but many are farmers especially interested in the land. The society was formed to speak for nature and for all of our natural resources. From its beginning the society has published a quarterly natural history journal, the *Blue Jay*, which tries to create more interest in and more understanding of nature. At each annual meeting resolutions have been passed urging preservation of nature and conservation of our resources including retention and conservation of water.

We proposed and supported the idea of a National Grasslands Park in the area between Killdeer and Val Marie. We believe that if a park is established in this area then it can be demonstrated that parks are *not* primarily for people, they are *not* primarily places for boating or swimming or golfing. Parks are places where nature has top priority. We

EDITOR'S NOTE: This brief was prepared on behalf of the Saskatchewan Natural History Society for the second Land Use Workshop, March 23-25, 1977.

Swathing wheat Gary W. Seib

believe that a grassland park will allow all Saskatchewan people to see and learn something of the beauty and value of native grasslands. We believe that most visitors to Saskatchewan are anxious to see something of the wide expanse and diversity which was southern Saskatchewan before it became primarily a wheat growing area.

Members of the SNHS have many different interests but they are unanimous in the belief that we need a land use policy which recognizes the value and importance of nature. The Society through the years has consistently urged preservation of habitat and landscape diversity, protection of endangered species, improvement of environmental quality, and the establishment of ecological reserves.

LAND USE CONFLICTS

It was unanimously agreed by the 36 delegates attending the first land use workshop, February 25-27, 1976, that there should be a Saskatchewan Land Use Policy.

This unanimity as reported in *Land Use Workshop Summary Repor* results from land use conflicts and from growing knowledge that there has been misuse of our land. Saskatchewan land use policies to date have given priority to the settlement of as much land as quickly as possible. Private ownership has been given preference over social benefits. Extraction of primary products (especially minerals) has been given priority over all other uses. Environmental protection has been given low priority and much of the responsibility for land use planning is in the hands of agencies which have no interest in the environment.[10]

Saskatchewan's Land Use Policy in the past has subdivided the responsibility for land among different agencies each one interested primarily in the quick extraction of a resource and the economic gain that could be obtained from that resource. Land became a commodity subject to speculation and to excessively high monetary values. Good farm land has been taken over by cities, towns, highways and industries. Wetlands and other natural areas have gradual

y been taken over by farms and anches. The new policy must be under one agency, must consider all uses of land, must put less emphasis on immediate economic gain and more emphasis on quality and permanence of living in Saskatchewan.

The *Land Use Workshop Summary Report* does not stress that 'soil' and 'water' are the two most basic elements involved in land use.[6] Since they are Saskatchewan's most valuable assets their conservation must be the first consideration in every aspect of the land use policy. Because 'soil' and 'water' are national assets no provincial government, municipal government, industry, group of people or private individual should have the right to exploit them for private gain as they have in the past. 'Soil' and 'water' belong to future as well as to present generations and the land use policy of the future must ensure that they are not abused by any user of land.

NEED FOR LAND USE POLICY

Naturalists recognize that man is completely dependent on nature for his food. In addition, much of man's shelter, paper, clothing and medicine comes from plants. This dependence on nature has led to the domestication of some plants and animals. All living species have a right to exist and it is man's responsibility to preserve the habitat which will allow them to continue their existence. Natural areas not only contain a diversity of species, and a genetic heterozygosity within species, but provide quality of life and some guarantee for the future.

Since much of southern Saskatchewan has been settled and used for the growing of cereal grains we must consider how efficiently and permanently this land can be farmed. First we must remember that the land was covered by glaciers only 10,000 years ago. When the area was prairie, organic matter slowly accumulated to form top soil. Under cultivation, especially during summerfallowing, 50% of this organic matter has been lost.[9] Second, since the natural prairie was dominated by grass we know that water in the area is limited. In spite of the need to conserve water, which does not easily penetrate cultivated fields, and which needs organic matter for its retention, there is increasing evidence of ditching.[7]

Not only do naturalists recognize that agriculture has abused the renewable resources (soil fertility and water) but they see an instability in crops which is absent in natural ecosystems. This instability is particularly evident in the monoculture of modern agriculture and forestry. Emphasis on short-term economic objectives which often fail to consider all of the production costs have led to uniformity of product. The uniform crop is a perfect environment for various plant and animal pests hence biocides must be used to protect the crop. Even with chemicals it is not always possible to protect the crop, e.g., corn blight on U.S. hybird corn.[13]

Since 1962 naturalists have questioned the use of all chemicals, fertilizers as well as biocides, though it is generally admitted that some chemicals must be used.[1] Partly, the problem arises from the accumulation and concentration of some poisons to the detriment, and endangering the very existence, of some species. Partly, the problem is one of uncertainty about the long-term effects of synthetic chemicals. Then there is the certainty that there will be human error which may result in gross contamination of the environment, e.g., the P.B.B. episode in Michigan.[2]

Naturalists in Saskatchewan recognize that agriculture is the largest user of land. There are also other legitimate uses of land, including settlement, industry, mineral extraction, highways and recreation. Each of these uses can disrupt the balance and the recycling which takes place in the natural, diverse ecosystem. We hope that, when land is used, there will be very careful consideration of environmental effects and that there will be serious effort to produce only minimal environmental

damage. Saskatchewan could, for example, suffer serious down-wind damage from strong acids (H^2SO^4 and HNO^3) produced from exploited Alberta tar sands.[4]

Finally, but most important to naturalists, we are aware that populations of many species of plants and animals are becoming dangerously low. There is a rapidly growing list of rare and endangered species and the main cause is habitat change. On large continental land masses species are not normally subject to extinction, however, some of our native species are already extinct and it is estimated that about 10% of our native species are rare or endangered. Canadians do not wish to be responsible for causing the extinction of any more forms of life and some suggest that small plots be left for native plants and animals. Unfortunately, if these areas are small they, like islands, contain small populations and some of the species may become extinct.[11]

Water erosion Lorne Scott

LAND USE GUIDELINES

I AGRICULTURE

Naturalists believe that the priorities in agriculture have been wrong. Land (like air and water) is not a commodity, it is a resource. Agriculture's main aim should be efficient use of land with long-term productivity receiving more consideration that short-term economic gain. We would like to stress the following guidelines:

1. Complete freeze on all plans to increase acreages for cereal crops. Once marshes, grasslands and other valuable natural ecosystems have been plowed there is no way they can be converted back. Until there is an effective land use policy no additional lands should be broken.
2. Complete freeze on all plans to increase acreages of tame grass at the expense of native grasslands. Grazing lands may be increased by planting grass and alfalfa on marginal lands now used for annual cereals.
3. Recognize that water is an essential renewable resource. Release information on how to delay spring melting and increase water penetration of the soil (snowplowing, contouring, reduced grazing pressure, and vegetation on watershed areas). Agricultural productivity can be improved and seasonal flooding problems can be reduced in severity or eliminated.
4. Eliminate all public assistance to projects draining water from private lands. Penalize all private drainage projects which increase flooding of adjacent lands. Insist on impact studies before any drainage project is permitted.
5. Reduce and eventually, if possible, eliminate the practice of summerfallowing. At present, some 32,000 square miles in Saskatchewan each year are summerfallow and subject to wind and water erosion and to loss of organic matter. Research on methods of reducing summerfallow should include rotations, companion crops and use of herbicides.

raining wetlands Gary W. Seib

. Research to demonstrate the harmful effects of monoculture, depletion of certain nutrients and accumulation of certain toxic substances. Research to demonstrate the beneficial effects of mixed crops.

MINERAL LANDS

Mineral lands may be exploited if rior impact studies indicate that here would be minimal socio-conomic and environmental disrup-ion and provided complete reclama-ion is guaranteed and is included in he cost of the mineral extracted. We ssume that mining will not be allow-d in national or provincial parks, in cological reserves or in historic sites here the primary objective is preser-ation. Further, we assume that lanket exploration permits will not e granted without the knowledge nd permission of individuals or gencies holding surface rights.

I FORESTRY LANDS

Forestry lands may be exploited for umber if there is strict supervision by people who understand forest ecology. Forest lands are public lands and they may provide a wide variety of controlled recreational opportunities. We recommend that there be completely protected natural areas within the forest lands.

IV NATURAL AREAS AND RESERVES

Nature reserves should be designated and protected in all parts of the province. These areas should be in all soil types and in all vegetation and climate zones. Some nature reserves may be relatively small but in these cases they must be carefully managed. Protected natural areas receive less protection than nature reserves but they are not for intensive or mechanized recreational use. They may be used for educational and non-disruptive scientific purposes.

V RECREATION (INCLUDING FISHING AND HUNTING)

Some areas must be designated for outdoor living and for recreation. This becomes increasingly important as man becomes more urban. It is obvious that areas set aside especially for recreation are receiving very high use. More parks are required.[5] Parks must be protected from over-use by people and they must not be deteriorated by lumbering, mining, grazing or other commercial activities. Some recreational areas may be located in forests, or grasslands, by arrangement with the commercial interests which are exploiting those areas. Still other areas may be very artificial and these will include golf courses, ski and toboggan grounds and heavily used picnic sites. If the recreational areas are located close to the larger cities and towns they will take most of the pressure from parks in natural areas.

VI SETTLEMENTS

Although the population, seeking jobs and the conveniences and privileges of modern civilization, is becoming increasingly urban those still living on farms should also be able to live a good life. Concentration of people in cities, especially where there are large apartment blocks,

Road-killed deer Lorne Sc

greatly reduces the amount of land needed per person. Cities should contain parks, outdoor space and green belts so that people occupying a minimal land space still may have a quality of life. Urban sprawl and urban fringe development should be rigidly controlled by the land use policy.

VI HIGHWAYS AND PARKING LOTS

Highways, parking lots and pipelines and other utilities take an appreciable amount of land especially in and near cities. In addition, roads act as a barrier to wildlife movements and are a deathtrap for thousands of animals. Roads aid in the dispersal of noxious weeds and they should not be built into areas where the objective is to preserve nature.

DEVELOPMENT AND IMPLEMENTATION OF A LAND USE POLICY

Saskatchewan naturalists believe that a land use policy should be developed by the Department of Environment in co-operation with public citizens who have a broad in terest and understanding of en vironmental concerns. This bod would enunciate a land ethic and general land use policy. Applicatio of the policy would be regional (ther would probably have to be regiona boards or subcommittees). Wher regional land use policies recognize the need for a change in land use a affected individuals and agencie would be notified and would b given opportunities to challenge th land use decision.

IMPLEMENTATION OF THE LAN USE POLICY should recognize tha land contains two renewabl resources, organic matter and wate and that both these resources ar easily abused. Use of land should ai at conserving and increasing fertilit and water holding capacity.

AND, manage and control the us of all Crown lands in the provice fo the benefit of all the people. An change in the use of land must, o course, have public approval.

AND, establish natural areas in a

parts of the province for the education and enjoyment of man.

AND, establish ecological reserves in every soil type and vegetation zone of the province for the preservation of native plants and animals.

AND, consolidate and supervise the government role in land use planning.

CONCLUSION

Land in Saskatchewan is not unlimited and there are many different uses for the land. The first use of land was for farming and most of us would give agriculture some priority to use of land. In this brief we emphasize that natural habitats must be preserved and we recommend that there be a freeze on acquisition or cultivation of additional lands by agriculture until such time as all land uses have been assessed and evaluated. The land use policy which is developed must show concern for the health of the environment.

[1]CARSON, RACHEL. 1962. Silent Spring, 368 pp. The Riverside Press, Cambridge, Mass.

[2]CARTER, L. J. 1976. Michigan's PBB incident: chemical mix-up leads to disaster. Science, 192, 240-243.

[3]Economic Council of Canada, 5th annual review, September, 1968.

[4]GALLOWAY, J. N. *et al.* 1976. Acid precipitation in the northeastern United States: pH and acidity. Science, 194, 722-723.

[5]HARPER, T. A. 1976. The Rural Councillor, 11, 26-30.

[6]Land Use Workshop Summary Report. 1976. Sask. Dept. of Environment, April.

[7]LYSTER, B. 1976. Spring flooding linked to farm drainage projects. Country Guide, Dec., 26-27.

[8]PIMENTEL, D. *et al.* 1976. Land degradation: effects on food and energy resources. Science, 194, 149-155.

[9]RENNIE, D. A. 1976. Conserving our soils. The Rural Councillor, 11, 30-38.

[10]Saskatchewan Environmental Advisory Council, 1974 annual report.

[11]SIMBERLOFF, D. 1976. Species turnover and equilibrium island biogeography. Science, 194, 572-578.

[12]THAIR, P. J. 1976. Farm size and farm tenure. The Rural Councillor, 11, 22-24.

[13]WADE, N. 1972. A message from corn blight: the dangers of uniformity. Science, 177, 678-679.

Horses in a community pasture — Gary W. Seib

A SEVENTEENTH-CENTURY BOTANY SEMINAR

MARGARET BELCHER, 2601 Winnipeg Street,
Regina, Saskatchewan S4P 1H8

The seventeenth century was characterized by an interest in science that led to the founding of the Royal Society of London and the *Academie des Sciences* in France. Although only these two bodies had official status, they were however by no means the only organizations of their kind. Particularly in France, private assemblies of natural science were popular, frequented by persons with much more catholic interests than the members of our present-day specialized scientific societies.

One of the most popular of the French academies was the one organized by the Abbe Bourdelot for the Prince de Conde, the great military leader, who also delighted in gatherings of scholars and scientists. The meetings of this body were also frequently attended by visitors from other countries, like Christopher Wren. The Academy's first interests appear to have been medical, if we are to judge from its typical activities which included the dissection of animals and the discussion of controversial subjects like blood transfusion. The latter had become a lively subject following the death of a poor Paris madman given a transfusion of blood from a calf in an attempt to cure his insanity. Later, however, Bourdelot encouraged a more general audience by inviting other scientists and offering to publish their lectures.

Paolo Boccone, herbalist to the Duke of Florence, was one of these invited lecturers. Boccone had come to Paris ostensibly to study the plants of France. He brought with him a collection of mounted plants from Italy, many of which he claimed were rare and undescribed by authors . . . a collection he hoped eventually to offer to the Royal Society of London. In Paris, he organized a series of discussions or seminars which he described in detail in a promotion handbill which can still be seen in th collection of the British Museum.[1]

Caltha palustris major (The great Mars Marigolde). "Marsh Marigold hath grea broad leaves somewhat round, smooth, d a gallant greene colour, slightly indente or purlde about the edges, among whic rise vp thicke fat stalkes, likewise greene wherupon do growe goodly yello flowers, glittering like gold, and like t those of Crowfoote, but greater: the root is small, composed of verie mani strings. . .". From GERARD'S Herball, p.67 (1597).

Medical doctors and the gener public were invited to attend thes "conferences" at Boccone's hom free of charge. Each person w allowed to bring half a dozen plan — fresh or dried, of rare or interestin

pecies. It was proposed to draw by t those to be examined first. Only ight people could actually par- cipate in keying out the plants, since was necessary to keep such a circle mall. The rest simply listened or oc- upied themselves looking up eferences in the botany manuals rovided. Two pads of white paper ere also provided, the one for riting down all the proposed iden- fications and the other for displaying e corresponding plant specimens. ch participant had to write down s opinion, but to save embarrassing nyone all but the identification enerally agreed to would later be ased! Each person was asked to fferentiate between a tentative entification that he felt needed to verified, and one of which he was lly convinced after examination of e plant and comparison with the uthor's description. Boccone utioned, however, that one plant n often be mistaken for another, d be practically unrecognizable un- r different conditions of growth d climate. When a new or exotic ant was brought for identification, nly a tentative identification was ade, pending consultation of other manuals. Each person left the conference with a list of plants identified, and the right to challenge any identification at the next meeting. The practical "laboratory" approach that we associate with modern science already characterized this seventeenth-century botany seminar!

Boccone claimed it possible to obtain a modest knowledge of plants in two months by following a definite programme of travelling, collecting and studying botany manuals. Furthermore, he particularly invited women to become botanists. He noted that Englishwomen were said to be very fond of botany, and that in his own experience at Lyon he had instructed two gentlewomen who were able in three months by assiduous application to learn almost all their local plants. All of which gives a pleasantly modern ring to this seventeenth-century series of botany seminars.

[1]BROWN, HARCOURT. *Scientific organizations in seventeenth century France (1620-1680)*. New York: Russell and Russell, 1967 (1934).

low Lady's Slipper

Gary W. Seib

THE GIANT ASPEN

D. R. ROBINSON, 1119 Temperance Street, Saskatoon, Saskatchewan

In June, 1906, my father filed on a homestead on the N.E.6-36-14, W. 2nd. This was father's third homestead, the location ten miles east of the village of Quill Lake. At that time, and for several years later, there was one poplar tree growing on this quarter which we will call the "giant aspen" *(Populus tremuloides).* My older brother, Clair, states that the species name is correct. The Aspen Poplar was used almost exclusively as firewood and was much superior to the Balsam Poplar *(Populus balsamifera),* locally referred to as black poplar because of the much darker colored bark. There were scattered trees of this species in our community but it would comprise less than one percent of the poplar population.

When cut down in 1910, the giant aspen measured 23 inches in diameter some two feet above ground level. The height of this tree was about 45 feet. As a younster I well recall this poplar, the crown towering well above the neighbouring trees. The land in that district is relatively level and this tree had no apparent advantage as regards moisture supplies.

A further reference to tree growth in this community may be in order. On the quarter section, above mentioned, and on the east half of section 7 there was a fair stand of large aspen poplars, occupying an area of about 250 acres. They were not as large as the giant aspen but would range from 14 to 16 inches in diameter. In the winter of 1907-08 W. Ratz of Quill Lake operated a small sawmill on section 7. Power was provided by a stationary steam engine burning slabs. Saw logs were cut by the settlers and sawed into rough lumber.

During the period 1904 to 1910, when this community was settle there were numerous bluffs of aspe poplar ranging up to 12 inches i diameter. These trees were used e tensively in the building of log house and barns.

It is my opinion that the inform tion presented here might be wor recording for the following reason

(a) The size and probable age of th giant aspen; and

(b) The location of this small stand forest trees in what is common referred to as the park belt. Th nearest lumbering area at th time was 23 miles to the north the Nora district, and again so 25 miles northeast in the N Mountain community.

Assuming that the giant aspen wa particularly vigorous specimen it m have been a small sucker or seedli in 1850. The other large poplars, o for lumber, perhaps commenc growth in the early 1860's. (In t older section of Nutana, Saskatoo there are two trees of the Eastern C tonwood *(Populus deltoides)* th were planted in 1911. This is a ra growing species and these trees a now about 67 years of age and a proximately 30 inches in diameter). the records of the fur traders a other early western travellers there frequent reference to widespre fires on the plains and the adjac parklands. It seems probable tha fire swept through this territo north of the Quill Lakes, in the l 1860's. The extensive stands of yo aspen poplars developed during next 36 years. The small acreage large poplars, in some manner, caped the fire. By 1907 these tr would have reached an age of ab 45 years and the old giant, in 1910, age of some 60 years.

SOME BUTTERFLIES AND SKIPPERS FROM THE MILK RIVER-LOST RIVER AREA OF SOUTHEASTERN ALBERTA

W. W. SMITH, 8200 Elbow Drive, Calgary, Alberta,
and C. D. BIRD, Department of Biology, University of Calgary

Very few ecological investigations have been conducted in the Milk River and Lost River valleys of southeastern Alberta. In the summer of 1974, intensive field work was carried out in this area, by Smith. Periodic checks were also made throughout the summers of 1975 and 1976. During the course of this field work, 29 species of butterflies and skippers were observed, with collections made of most species. Included here are the first published report of Weidemeyer's Admiral *(Limenitis weidemeyeri oberfoelli)* for Canada, the first published report of Dun skipper *(Euphyes vestris metacomet)* for Alberta, as well as reports of several other species whose occurrence in Alberta has been poorly documented. Also included are three species that were collected by other people previous to 1974.

The area dealt with in this paper is some 270 square miles of grassland and valleys centered on the Milk River in the Pinhorn Grazing Reserve, and the Lost River on the west edge of the Onefour Experimental Station. This arid area, corresponding to a dilute Upper Sonoran zone, is biogeographically unique. Such interesting species as Yucca *(Yucca glauca)*, Northern Scorpion *(Vejovis boreus)*, Short-horned Lizard *(Phrynosoma douglassi)*, Yellow-bellied Marmot *(Marmota flaviventris)*, and Bullock's Oriole *(Icterus bullula bullockii)* occur here. The dominant feature of this region is the gently undulating native grasslands. These grasslands are of the mixed grass type with the major species being *Stipa* spp. and *Bouteloua gracilis*. The two major valleys and their associated coulees lend a great degree of diversity to the otherwise simplistic grasslands. Communities range from barren, actively eroding slopes, short-grass prairie hillsides, numerous shrub communities, to tree stands. Shrub communities of this area are highly variable and include Thorny Buffalo Berry *(Shepherdia argentea)*, Wolf Willow *(Elaeagnus commutata)*, Buckbrush *(Symphoricarpos occidentalis)*, Rose *(Rosa* supp.*)*, Sagebrush *(Artemisia cana)*, Greasewood *(Sarcobatus vermiculatus)*, Willow *(Salix* spp.*)*, Juniper *(Juniperus* spp.*)*, Saskatoon *(Amelanchier alnifolia)*, and Chokecherry *(Prunus virginiana)*. Shrub stands may be of a single species, or a heterogenous mixture of several to many species. Mixed shrub communities occurring in the upper reaches of small, damp coulees support the largest populations of butterflies.

Tree stands are of two main types. Pure, sometimes extensive, stands of Cottonwood *(Populus sargentii)* occur along the Milk River. Stands of hybrid poplars grow in thick, but usually small, clumps in the moister portions of some coulees.

The badland topography of the Milk River is similar to, but not as extensive as, the badlands occurring along the Red Deer River in the Drumheller-Dinosaur Park area. In many cases, the vegetation of the two areas is quite similar. Many species of butterflies that occur along the Milk River, also occur along the Red Deer River.[1] A rather similar area is that of the former Nemiskam National Park, 40 miles to the northwest.[5]

Both the study area and that of the Red Deer River badlands are quite arid and receive the lowest amount of rainfall in Alberta. The mean annual

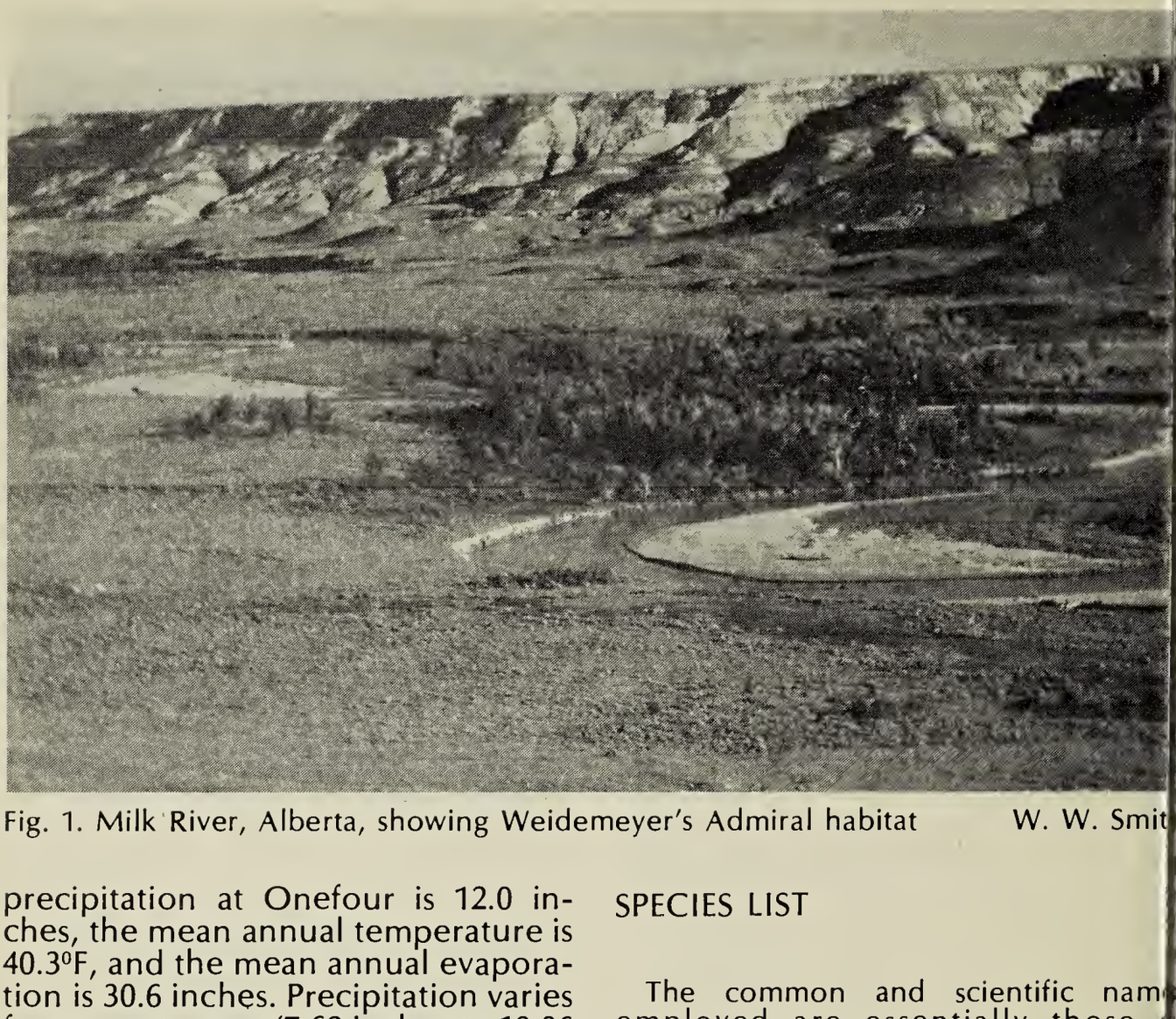


Fig. 1. Milk River, Alberta, showing Weidemeyer's Admiral habitat W. W. Smit

precipitation at Onefour is 12.0 inches, the mean annual temperature is 40.3°F, and the mean annual evaporation is 30.6 inches. Precipitation varies from year to year (7.62 inches to 18.06 inches) and the temperature has ranged from a low of — 51° F to a high of + 108° F. The prevailing winds are north-westerly, with westerly chinooks occurring during the winter. High winds throughout the year are frequent.[6]

Intensive collecting of butterflies and skippers was done every two weeks from early June to early August in 1974. As a result, a few species that fly in early spring, and fall were undoubtedly missed. Collecting was done throughout the entire study area with a slight emphasis on coulee habitats.

The butterfly fauna of the Milk River-Lost River area may be influenced by the Sweetgrass Hills, of Montana, which are some 30 miles south-south-west of the study area. These hills could serve as a source of wind-blown strays; and may allow for colonization of similar pockets of habitat in the study area.

SPECIES LIST

The common and scientific nam employed are essentially those Hooper's "Butterflies of Saskatchewan' Dates listed after a species name refer the date specimens were collected, and/ observed.

DUN SKIPPER *(Euphyes vestr metacomet).* June 30, 1974. This is the fi published report from Alberta, althoug specimens had been previously collecte in southern Alberta and are in a priva collection in Lethbridge. Hooper indicat that this species should occur widely Alberta.[4] The specimen collected was in coulee bottom containing greasewoo and sagebrush.

DELAWARE SKIPPER *(Artylone delawa lagus).* July 3, 1974; July 24, 1975. Found shrubby areas of coulee bottoms.

COMMON CHECKERED SKIPPE *(Pyrgus communis communis).* June June 10, 1974. Found in sagebrush flats a grassy areas of coulee bottoms.

PERSIUS DUSKY WING *(Erynnis persi frederickí).* August 3, August 7, 19 Found in low shrub areas in coulees.

SILVER-SPOTTED SKIPPER *(Epargyre clarus clarus).* July 3, July 10, 1974. Found tall shrub areas in coulees.

YPRESS HILLS OLD WORLD VALLOWTAIL *(Papilio machaon dodi).* ne 11, 1974. Found in mixed grassland d willows along the edge of cot-nwoods.

RUCE'S SWALLOWTAIL *(Papilio bairdii ucei).* July 24, 1975. Found in mixed assland near coulee edges.

ANADIAN TIGER SWALLOWTAIL *pilio glaucus canadensis).* Only oc-ionally observed in treed side coulees.

ABBAGE WHITE *(Pieris rapae).* Com-n in most habitats.

LFALFA BUTTERFLY *(Colias rytheme).* Common in most habitats.

AY HAIRSTREAK *(Strymon melinus muli).* August 7, 1974. Found in coulee ttoms containing sagebrush and easewood.

RPLISH COPPER *(Lycaena helloides).* ne 29, 1975. Found in rose and sagebrush mps on the edge of an oxbow lake.

ELISSA BLUE *(Lycaeides melissa elissa).* June 30, July 3, July 5, August 3, gust 7, 1974; June 29, June 30, July 24, 5. Found commonly in many habitats.

EENISH BLUE *(Plebejus saepiolus ica).* June 6, June 7, June 8, June 10, 4; June 29, 1975. Found in low shrub as throughout.

OTTED BLUE *(Philotes enoptes an-a).* June 30, 1974; June 30, 1975. ecimens were found in short-grass and ubby areas in coulee badlands. viously known from Alberta only from Cypress Hills, with its main range ther south in the United States.[4]

SILVERY BLUE *(Glaucopsyche lygadmus couperi).* June 10, 1974. Found in low shrub areas.

SPRING AZURE *(Celastrina argiolus lucia).* June 3, 1973. Collected by G. Hilchie. The food plant, Red Osier Dogwood, is present.

VICEROY *(Limenitis archippus archippus).* July 3, 1974. Found commonly in tall shrub areas in moister coulees.

WEIDEMEYER'S ADMIRAL *(Limenitis weidemeyeri oberfoelli).* July 3, 1974. This species has not been previously reported as occurring in Canada, although a specimen from the late 1800's-early 1900's in the National Museum is labelled as having come from the Belly River, Canada. Gregory reports this specimen as *Limenitis weidemeyeri weidemeyeri.*[3] The subspecific status is probably wrong, and there is some doubt about where the material was collected.

This species was frequently observed in the study area wherever poplars and pools of still water occurred together. The subspecies, described by Brown is known from North and South Dakota.[2] Material mentioned by Hooper from Big Sandy, Montana, probably belongs to this subspecies.[4] F. Martin Brown, who described subspecies *L. w. oberfoelli,* states in a letter dated May 28, 1975 that: *"L. w. oberfoelli* is easily recognized by the red spots between the submarginal white points and white band on the dorsal hindwing." It is of interest to note that no White Admirals *(Limenitis arthemis)* have been observed in the study area. At Writing-on-Stone, some 20 miles upstream, a few White Admirals and many Weidemeyer's Admirals

W. W. Smith

2. Weidemeyer's Admiral *(Limenitis weidemeyeri oberfoelli)* collected in the Milk er-Lost River area, Alberta on July 3, 1974 by W. W. Smith. The scale is in centimeters

were observed in early July 1976 along creekside shrub habitats.

RED ADMIRAL *(Vanessa atalanta).* Observed in cottonwood stands.

MOURNING CLOAK *(Nymphalis antiopa).* Observed in tall shrub and poplar stands.

PEARL CRESCENT *(Phyciodes tharos pulchella).* June 7, June 10, 1974; June 29, 1975. Found in low shrub areas.

CARLOTA CHECKERSPOT *(Chlosyne gorgone carlota).* June 10, 1974. Found in low shrub and grassy areas.

ACASTA CHECKERSPOT *(Chlosyne acastus acastus).* June 30, July 5, 1974; June 30, 1975. Found in coulee bottoms containing sagebrush, greasewood and grasses. This species is previously known in Alberta only from badland areas along the Red Deer and Oldman River systems.

EDWARD'S FRITILLARY *(Speyeria edwardsii).* July 21, 1967. Collected by A. G. Edmund.

CALLIPPE FRITILLARY *(Speyeria callippe calgariana).* July 1, July 3, July 5, 1974; July 24, 1975. Found in mixed prairie areas.

APHRODITE *(Speyeria aphrodite mayae).* July 24, 1975. Found in long grass and shrub areas.

RINGLET *(Coenonympha inornata benjamini).* June 7, 1974; June 29, 1975. Found in grassland areas.

COMMON WOOD NYMPH *(Cercyonis pegala ino).* July 6, August 3, 1974; July 24, 1975. Found in most grass and shrub areas.

SMALL WOOD NYMPH *(Cercyonis oe charon).* June 30, July 8, 1974; July 24, 19 Found in areas of sagebrush a greasewood.

RIDING'S SATYR *(Neominois riding ridingsii).* July 3, 1973. Collected by Hilchie.

VARUNA ARCTIC *(Oeneis uhleri varun* June 7, June 10, June 11, 1974. Found mixed grassland areas.

[1]BIRD, C. D. and N. KONDLA. 1974. So skippers and butterflies from Dinos Provincial Park, Alberta. Blue Jay 87-88.

[2]BROWN, F. M. 1960. A badlands su species of *Limenitis weidemey* Edwards (Lepidoptera, Nymphalida American Museum Novitates, Numb 2018, 6 pp.

[3]GREGORY, W. W. 1975. Check-list of t butterflies and skippers of Cana Lyman Entomological Museum a Research Laboratory Memoir No. 1975.

[4]HOOPER, R. 1974. Butterflies of Sask chewan. Saskatchewan Department Renewable Resources.

[5]SOPER, J. D. 1949. Notes on the fau of the former Nemiskam National P and vicinity, Alberta. Canadian Fi Naturalist 63: 167-182.

[6]THOMAS, M. K. 1953. Climatologi atlas of Canada. Canada Department Transport. Ottawa 255 pp.

A SNAKE'S WINTER

ALEXANDER W. L. HAWLEY*

Any animal that lives year-round in the Prairie Provinces must tolerate long and cold winters. Different animals cope with these severe conditions in different ways. Many homeotherms (warm-blooded animals) are capable of staying active throughout the winter if food remains available. Maintenance of a high metabolic rate and good insulation (i.e., hair, feathers, and subdermal f permit maintaining a bo temperature high enough to allow tivity. Some homeotherms becor torpid during the winter, occasiona becoming active to feed on stor food. Others, particularly thc whose food source essentially c appears for the winter, cannot me the high energy demands of stayi active under such cold conditions a are forced to hibernate.

Since their body temperature

*Condensed from Manitoba Nature, Vol. 14, No. 3, Autumn, 1973.

pressed during hibernation, meotherms select their rwintering sites to avoid freezing peratures. However, if by chance environmental temperature drops within one or two degrees of freez-, most homeotherms are aroused increase their metabolism, thus easing body temperature. This ws them to become active, and sibly seek more suitable shelter.

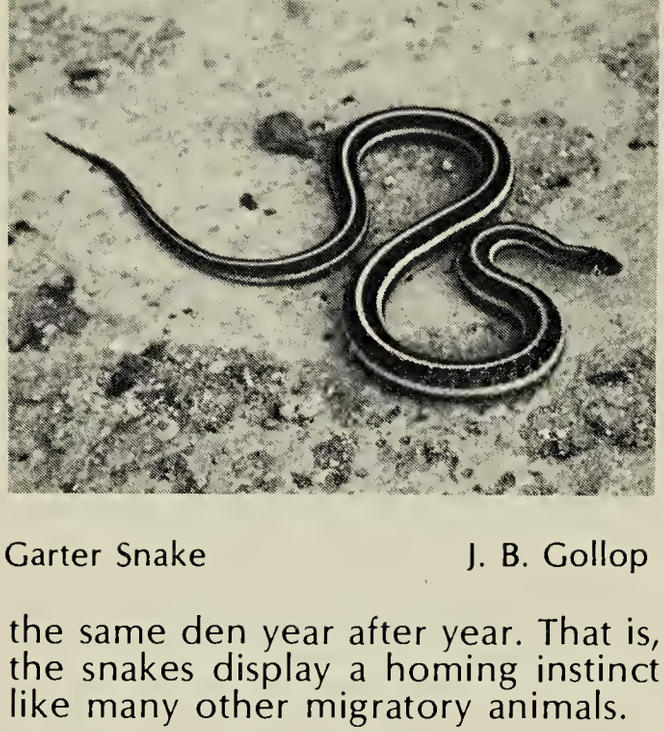
oikilotherms (cold-blooded mals) do not display this wide ge of capabilities. They produce tively less metabolic heat than meotherms. With no effective sur- e insulation such as hair or hers, and little subdermal fat, ir body temperature depends on temperature of their immediate roundings and what heat they can rb from the sun's rays. Unless re is an external source of heat h as sunlight, temperatures below at which ice forms in their tissues quickly kill most poikilotherms. s all poikilotherms in this area st hibernate, and they must do it in heltered place. The Red-sided ter Snake *(Thamnophis sirtalis etalis)* is particularly interesting. only is it the most common rep- in Manitoba, but it lives farther th than any other reptile on this tinent. Thus it is likely this kilotherm has developed a good hanism for surviving the winter.

he Red-sided Garter Snake es- es low winter temperatures by go- underground. Not being a very d burrower, this snake relies on ural accesses to the soil to get w the frost line. For this reason it rgely confined to the more rocky as of the province like the rlake. Here water erosion has ted many cracks and fissures in limestone. In some places sub- anean erosion has created larger erns and limestone sinks (caverns a series of fissures which have apsed creating a rocky pit). These serve as natural hibernacula for snakes.

his species dens communally and he fall tens of thousands of garter kes congregate around the hiber- nacula. The snakes start collecting around the den sites in early September. When temperatures drop at night they seek shelter in the hibernaculum, re-emerging the next day. As the weather gets colder, fewer snakes remain active, and these spend less time above the surface. The last animals finally disappear underground around late October . . . Low environmental temperatures will depress the snakes' body temperatures. Decrease body temperature will decrease all body activity. Thus the snakes are unable to move very far or very fast in the cold. Because of this, they could be trapped above ground for the winter by low late-autumn temperatures if they were not already at the den site.

The original selection of a hibernaculum is probably a function of accessibility to frost-free areas, and it appears that almost any access route will do. Several hundred snakes now use the foundation of the creamery at Inwood, Manitoba, as a hibernaculum. The creamery may have been built over an already-active den without deterring the snakes. . . Or, it could have developed as a denning site after its construction. Several of the local residents have snakes hibernating in their basements and barns. Although some people have an aversion to this harmless little snake and object to the intrusion, it was probably the people who intruded on the snakes.

Young snakes do not spend their first winter at a communal den. They are born in August at or near the areas of summer habitation. Although it is almost certainly someplace underground, no one knows exactly where they spend the first winter. They might overwinter individually in smaller fissures and openings in the rock. Young garter snakes have, on occasion, been found in anthills, and these have been suggested as possible overwintering sites. The second is spent at a communal den. What causes a snake to make this change in denning habits is also unknown. We do know that once a hibernaculum is selected, the snakes tend to return to



Garter Snake J. B. Gollop

the same den year after year. That is, the snakes display a homing instinct like many other migratory animals.

What happens to the snakes during their six months underground? We really don't know. It is only with a decreased metabolic rate that animals can survive such long periods of fasting. Mammals must invoke special mechanisms to decrease their body temperatures. Of course, to a snake this is the normal conditon. The lowered temperature decreases the rate of the body's reactions. We don't know exactly what the temperatures are in dens during the winter. The lowest temperature recorded in one den was 1°C (34°F), but in places it may get colder. The Red-sided Garter Snake has a certain resistance to cold. It can tolerate -10°C (14°F) for one-half hour or more. It appears that this resistance increases with increased cold exposure, so that in the winter the snakes are most capable of tolerating low tempertures. But the snakes freeze after prolonged exposure to such cold.

Poikilothermic vertebrates cannot tolerate actual freezing. Once their tissues have frozen, they have little capacity for revival when thawed. However these animals may be able to indefinitely resist freezing at temperatures only a few degrees below 0°C (32°F). There are several possible ways to do this. One is to increase the concentration of solutes in the body fluids which depresses the actual freezing point of the fluids. Another involves the phenomenon supercooling. The "freezing point" the highest temperature at which can exist in a solution. Supercooling the condition in which the tiss temperature is below its freezi point without the formation of i The mechanism of supercooling tissues and cells involves noth more than the physico-chemi nature of water and the spontaneo formation of ice crystals. Even pu water can be supercooled to -20 (-4°F) and lower. There is reason believe that the capacity to superc might vary from species to species might also vary with the state hydration of an animal, or t temperatures to which it has be recently exposed.

The Plains Garter Snake *(Tha nophis radix),* another species fou in Manitoba, has been found hibernate successfully at -2°C (28 This suggests a long-term sup cooling capacity. The Red-sid Garter Snake may also have t capacity. All these means of surv involve a tolerance of l temperatures. Unlike mammals, th is little a garter snake can do to crease its body temperature either increasing its metabolic rate or shiv ing.

Despite the various mechani this snake has evolved to survive winter, there still apears to be a h degree of overwintering morta Perhaps many of the snakes don't deep enough underground to av freezing. Or perhaps many die f lack of oxygen. We may never kn Like so much of our knowledge of adaptations these reptiles have m to survive our harsh climate, we still very much out in the cold.

5th ANNUAL SASKATCHEWAN CHRISTMAS BIRD COUNT — 1976

mpiled by MARY I. HOUSTON, 863 University Drive,
skatoon, Saskatchewan S7N 0J8

For the first time since 1971 no new ecies has been added to the skatchewan Christmas count list. e total remains at 123 species seen count day with 6 additionals seen ring count period. This year's total s 68 species with 2 additionals served in 55 localities, which is an time high for number of areas porting — last year's 52 was the se- nd highest.

Weather was generally good and e growing popularity of cross coun- skiing allowed more counters to out for more thorough coverage.

Twenty-five species were sighted in y 1 location — ten of these at Fort lsh by a keen group who worked e area thoroughly. This group nd a flock of 140 Gray-crowned sy Finches. The species had been orted last year from Spring Valley, otherwise, not since 1945 and 6 at Dollard.

One Glaucous Gull was reported in at Gardiner Dam, making the ond consecutive year, for this cies, not seen before on a Christ- s Bird Count.

nowy Owls seemed to be in small ncentrations — many areas had ne (including Saskatoon), while re were 9 at Frontier, 3 at t Mountain Lake, 5 at Moose Jaw, 9 Regina, 3 at Spring Valley and 6 at erose (the same observer saw 4 hin a 4 mile radius of Elrose on Jan.

harp-tailed Grouse, though orted from only one more locality last year, seemed generally up in mbers. Gray Partridge were orted from 27 areas and were initely up in number. On the other d, Evening and Pine Grosbeaks Common Redpolls were down in nber.

ale Hjertaas and Gary Anweiler did a 6 hour count on Jan. 16 at Estevan (they were unable to get there during count period). They saw 15 species and 1059 individuals, including 4 species of waterfowl at Boundary Dam.

ASQUITH. Dec. 31; 4 miles on skis; temp. -18°C, partly cloudy; fresh snow; 5 species, 12 individuals. — Muriel Carlson.

BANGOR. Dec. 31; 30 miles by car and around yard; temp. -28°C, sunny, calm; 8 species, 103 individuals. (Add: Ruffed Grouse, 1; Great Horned Owl, 1; House Sparrow, 10). — Mrs. A. Thompson.

BIGGAR. Dec. 24; 106 miles by car in 8½ hours, 13 miles on foot in 10 hours; temp. -16° to -14°C, wind NW 8-24 kmph, clear in A.M. becoming overcast; 12 cm snow. 16 species, 2088 individuals. (Add: Merlin, 1, Dec. 22 and 28; Snowy Owl, 1, Dec. 26; Pine Grosbeak, 1, Dec. 21) — Darlene Dueker, Wayne Harris, Shelia Lamont, Wayne Renaud, Guy Wapple (compiler), Rodney Wapple.

BROADVIEW. Jan. 1; 28 miles by car and 2 miles on foot in 2½ hours; temp. -13°C, sunny, calm; 5 species, 43 individuals. (Add: Ruffed Grouse, 2, Dec. 29; Blue Jay, 1, Dec. 27; Bohemian Waxwing, 6, Dec. 22; Northern Shrike, 1, Dec. 26; Common Redpole, 3, Dec. 27) — Daniel, Dave and Wesley Chaskavich.

CLAVET. Dec. 18; temp. -5°C, wind NW 13kmph, snowing; 2 species, 55 individuals. (Add: Black-capped Chickadee, 2, Jan. 1; House Sparrow, 30, Dec. 24) — M. L. Baalim.

COLD RIVER. Dec. 19; 15 miles by car and 3 miles on foot in 4 hours; temp. -14°C, wind W. 6 kmph, overcast with light snow, 10 cm. snow cover. 12 species, 181 individuals. — William Haras.

DILKE. Dec. 26; 53 miles by car and 3 miles on foot in 5½ hours; temp. -8° to -7°C, wind SE 30 kmph, decreasing to 20 kmph; 8 species, 1324 individuals. (Add: Rock Dove, 1, Dec. 31; Snowy Owl, 1, Jan. 2; Short-eared Owl, 1, Dec. 31; Bohemian Waxwing, 30, Dec. 19) — Margaret Belcher (compiler), Mr. and Mrs. S. R. Belcher.

DUCK LAKE. Jan 2; 6 miles on skis; temp. -20°C, clear. 6 species, 22 individuals. —

Don Carlson, Muriel Carlson, Gary Entwistle, Al and Ed Smith.

DUPEROW-RUTHILDA. Jan. 2; 112 miles by car in 7 hours, 10 miles on foot in 6½ hours; temp. -21° to -13°C; calm, clear, 10 cm. snow; 15 species, 3721 individuals. (Add: Golden Eagle, 1, Dec. 23; Snowy Owl, 1, Dec. 29) — Ron Chulach, Paul de Bussac, Aimee de Moissac, Morris L'hair, Guy Wapple (compiler), Rodney Wapple.

EMMA LAKE. Dec. 27; 2 miles on foot in 2 hours; temp. -25°C, wind NE 10 kmph, sunny; 10 species, 40 individuals. — Bob Godwin, Kim Godwin, Ken Lumbis.

ENDEAVOUR. Dec. 31; around farm; temp. -12° to -32°C, clear, calm; 44 cm. snow. 8 species, 135 individuals. (Add: Downy Woodpecker, 1, Dec. 29; Evening Grosbeak, 12, Dec. 29; Pine Grosbeak, 3, Dec. 28). — William Haras.

FEUDAL. Dec. 27; 65 miles by car in 3 hours, 3 miles on foot in 3 hours; temp. -12° to -15°C, wind NW 0 to 8 kmph., partly cloudy; 12 cm snow, 11 species, 3496 individuals. — Wayne Renaud, Guy Wapple (compiler).

FORT QU'APPELLE. Dec. 31; 35 miles by car in 4 hours; temp. -20°C, sunny, wind light; 13 species, 398 individuals. (Add: Canvasback, 1, Dec. 20; Sharp-tailed Grouse, 1, Dec. 24; Great Horned Owl, 1; Blue Jay, 2, Dec. 29; White-breasted Nuthatch, 4, Dec. 29; Cedar Waxwing, 2; Evening Grosbeak, 2, Dec. 29; Snow Bunting, 20, Dec. 19) — Ethel Cockwill, David Hooper, Ronald Hooper, Lois Lamontane, Vic Lamontane, Lorne Rowell.

FORT WALSH. Dec. 31; 60 miles by car in 3½ hours 27 miles on foot in 18½ hours; temp. -12° to -7°C, wind NE 0-48 kmph, mostly cloudy with light snow in A.M., clearing in P.M. 5-15 cm snow; 32 species, 1756 individuals. — Bob Godwin, Wayne Harris, Sheila Lamont, Ken Lumbis, Don Renaud, Wayne Renaud (co-compiler), Guy Wapple (co-compiler).

FRONTIER. Dec. 20; 52 miles by car and 2 on foot in 4 hours, around village and north to Frenchman River; temp. -16°C, clear light wind; 10 species, 207 individuals. (Add: Snow Bunting, 6, Dec. 21) — Jack and Janet Wilkinson.

GARDINER DAM. Dec. 30; 57 miles by car in 3 hours, 4 miles on foot in 5 hours; temp. -15°C, snow and blowing snow; 12 species, 299 individuals. — Wayne Harris, Sheila Lamont, Wayne Renaud, Al Smith (compiler), Guy Wapple.

GULL LAKE. Dec. 30; 30 miles by car in 1½ hours, 1½ miles on foot in 1 hour; temp. -8°C, wind W 48-64 kmph, overcast with light snow in P.M.; 5 cm. snow species, 506 individuals — Wayne Ha Sheila Lamont, Don Renaud, Wa Renaud, Guy Wapple (compiler).

HARRIS. Dec. 18; 144 miles by car in 1 hours and 24 miles on foot in 15 ho temp. -20° to -12°C, wind NNW 8-40 km overcast with snow causing near blizz conditions for most of the day; 10 snow; 15 species, 2741 individuals. — Bobowski, Bernie and Madeleine Gol Wayne Harris, Mary and Stuart Hous Ron Jensen, Sheila Lamont, John Shad Guy Wapple (compiler), Jim and Shi Wedgwood.

HAWARDEN. Dec. 25; temp. -2°C, clo to partly clear; 4 species, 424 individu (Add: Gray Partridge, 5, Jan. 2; Sn Owl, 1, Jan. 2; Bohemian Waxwing, Dec. 26) — Harold Kvinge.

HUMBOLDT. Dec. 25; 9.4 miles on skis hours and 10 miles by snowmobile i hour; temp. -16° to -10°C, calm, sunn A.M. cloudy in P.M.; 5 species, 359 dividuals. — Ed Brockmeyer.

INDIAN HEAD. Dec. 27; 10 miles by and 5 miles on foot in 2½ hours; te -15°C, overcast, light east wind; 15 snow; 16 species, 996 individuals. (A Bald Eagle, 1, Dec. 26; Snowy Owl, 2, D 24 & 29; Horned Lark, 5, Dec. 24 an Dec. 29; Blue Jay, 1, Dec. 24; North Shrike, 1, Dec. 26 and Jan. 1; Starling Jan. 1; Snow Bunting, 140, Dec. 28) — B and Cec Ashmore, Donald Ayers, C Beaulieu, Jeanette Bessier, Ernie and H Buglass, Marcella Horsman, Helen K Rose and Margaret McLaughlin, Lloyd Muriel Peterson, Eric and Lorna Peter Lorne and Joan Scott, Ken and N Skinner (compiler), Jean Swinton, Cha Ruby and Connie Thompson.

KELVINGTON. Dec. 26; around farm during day; temp. -22°C, wind SE, snow in P.M.; 9 species, 53 individuals. (A Horned Lark, 1, Dec. 24; Common R poll, 1, Dec. 28; Snow Bunting, 25, Dec — Dianne Sloan.

KENASTON. Dec. 18; area of 30 sq. m truck and on foot; temp. 0° to -5°C, p cloudy, snowing by 2:00 P.M., wind light to moderate; 4 cm snow. 6 spe 147 individuals. (Add: Gray Partridge Dec. 22; Black-capped Chickadee, 1, 22 & 23) — Lawrence Beckie.

KINDERSLEY. Dec. 26; 24 miles by about farmland and community past temp. -6°C, calm, sunny; 2 cm. sno species, 142 individuals. (Add: Bohe Waxwing, 8, Dec. 18) — Edgar, Joy and da Aspen, Jean Harris (compiler).

Wayne Renaud

ee of the 140 Gray-crowned Rosy Finches seen on the Fort Walsh count

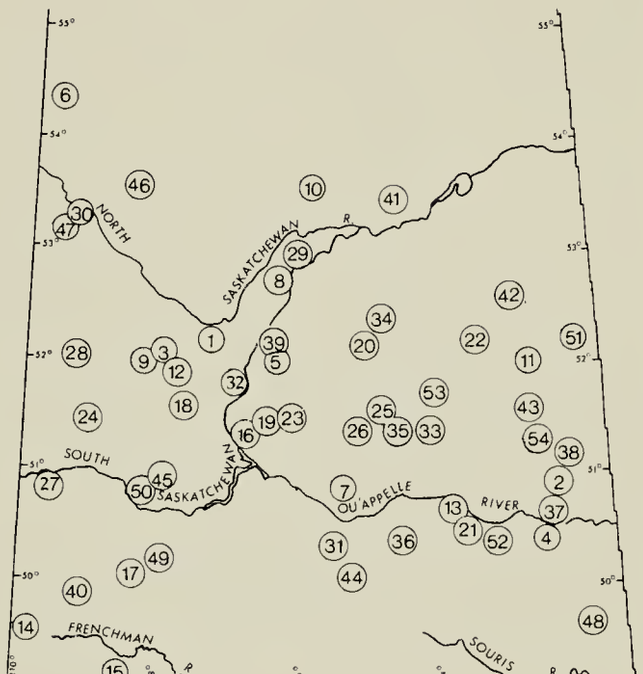
SPECIES RECORDED FROM MORE THAN ONE LOCALITY ON COUNT DAY

	Asquith Dec. 31	Bangor Dec. 31	Biggar Dec. 24	Broadview Jan. 1	Clavet Dec. 18	Cold River Dec. 19	Dilke Dec. 26	Duck Lake Jan. 2	Duperow-Ruthilda Jan. 2	Emma Lake Dec. 27	Endeavour Dec. 31	Feudal Dec. 27	Fort Qu'Appelle Dec. 31	Fort Walsh Dec. 31	Frontier Dec. 20
Canada Goose													7		
Mallard						98							85		
Gadwall															
Redhead															
Lesser Scaup															
Common Goldeneye						44							1		
Common Merganser						1									
Goshawk														2	
Golden Eagle												1		4	
Gyrfalcon															
Prairie Falcon															1
Merlin															
Ruffed Grouse	1					2				2	1			2	
Sharp-tailed Grouse	5		90				8		77		7	12		11	
Ring-necked Pheasant															
Gray Partridge			4				4		83		1	19		4	52
Rock Dove			57						89				22	9	40
Great Horned Owl									2			2		2	1
Snowy Owl												2		1	9
Short-eared Owl															
Hairy Woodpecker		1	2	1		3		1	2	3		1	1	8	
Downy Woodpecker	1	2	1	2		1		1	2	1		1	2	8	
Horned Lark			2				27		18				1	7	9
Gray Jay						1		1		2					
Blue Jay			1			1				3					
Black-billed Magpie	1	1	106	8	5	5	8	1	179	1	4	34	3	154	18
Common Raven						12		3		3	31				
Bl.-cap Chickadee	4	4	13	12		9	3		2	20	2	9	4	173	
Boreal Chickadee										4			1		
W-breasted Nuthatch														1	
R-breasted Nuthatch														60	
Brown Creeper														5	
American Robin														1	
Bohemian Waxwing		50	74					15					217	4	4
Cedar Waxwing															
Northern Shrike			1						2						
Starling									3						3
House Sparrow			1246	20		4	209		2229		60	14	44	422	70
Evening Grosbeak		1	17												
Pine Grosbeak		14												1	
Hoary Redpoll			3						2						
Common Redpoll			469				65		190				10	27	
Snow Bunting		30	2		50		1000		841		29	3401		571	
Single Species										1				10	
Total Species	5	8	16	5	2	12	8	6	15	10	8	11	13	32	10

CIES RECORDED FROM MORE THAN ONE LOCALITY ON COUNT DAY.

	Gull Lake Dec. 30	Harris Dec. 18	Hawarden Dec. 25	Humboldt Dec. 25	Indian Head Dec. 27	Kelvington Dec. 26	Kenaston Dec. 18	Kindersley Dec. 26	Kutawagan Lake Dec. 27	Last Mountain Lake Jan. 1	Leader Dec. 30	Leader Dec. 26	Luseland Dec. 28	MacDowall Dec. 31	Maidstone Ferry Dec. 22	Moose Jaw Dec. 27
ada Goose																
ard					35											
wall																
nead																
er Scaup																
mon Goldeneye																
mon Merganser																
hawk															2	
den Eagle	2									2						
alcon	1									1						
ie Falcon																1
in	1	1														
ed Grouse					9	2									1	
p-tailed Grouse		150			12		25		14	3		1	2		8	
-necked Pheasant											6	5				
Partridge	14	196								19	7		11		7	14
Dove	1	33	12		16		2	5	19	55			5		4	385
t Horned Owl				1	2				2		1	1			1	2
vy Owl	1							1	1	3			1		2	5
-eared Owl										1						
Woodpecker					4	2				1				1	1	
ny Woodpecker		3			7	2			1	1				1	1	1
ed Lark	9	30							3	18			21			
Jay				2		1								6		
Jay						2	1						1	2	6	
-billed Magpie	7	233	3	3	20		9	10	22	68	3	20	17	30	12	42
mon Raven														10		
p Chickadee		18		3	10	6			1		1	2	3	5	9	1
al Chickadee																
easted Nuthatch					1											
easted Nuthatch					2											
n Creeper																
ican Robin																
mian Waxwing		291			100	20						36	45			265
r Waxwing		1														
hern Shrike													2		2	
ng																6
e Sparrow	466	1013	9		700		100	25	149	490	25		100	10	307	711
ng Grosbeak					70	14									19	
Grosbeak		1				4									12	
Redpoll		1													1	
mon Redpoll	4	255			7		10			40	110		6		330	
Bunting		515	400	350				100	876	4140			59		450	1545
e Species					1			1								1
Species	10	15	4	5	16	9	6	6	10	14	7	6	13	8	19	13

1. Asquith
2. Bangor
3. Biggar
4. Broadview
5. Clavet
6. Cold River
7. Dilke
8. Duck Lake
9. Duperow-Ruthilda
10. Emma Lake
11. Endeavour
12. Feudal
13. Fort Qu'Appelle
14. Fort Walsh
15. Frontier
16. Gardiner Dam
17. Gull Lake
18. Harris
19. Hawarden
20. Humboldt
21. Indian Head
22. Kelvington
23. Kenaston
24. Kindersley
25. Kutawagan Lake
26. Last Mountain Lake
27. Leader
28. Luseland
29. MacDowall
30. Maidstone Ferry
31. Moose Jaw
32. Pike Lake
33. Punnichy
34. Ranch Lake
35. Raymore
36. Regina
37. Round Lake
38. Saltcoats
39. Saskatoon
40. Skull Creek
41. Snowden
42. Somme
43. Spirit Lake
44. Spring Valley
45. Tuberose
46. Turtle Lake
47. Waseca
48. Wauchope
49. Webb
50. White Bear
51. Whitebeech
52. Wolseley
53. Wynyard
54. Yorkton



KUTAWAGAN LAKE (centered 12 miles north of Semans). Dec. 27; 30 miles by car in 2 hours and 1 mile on foot in 1 hour; temp. -20° to -10°C, clear, wind NW 10 kmph; 15 cm snow; 10 species, 1088 individuals. — Wayne Harris, Sheila Lamont.

LAST MOUNTAIN LAKE (management unit and immediate area). Jan. 1; 80 miles by car in 5 hours and 3 miles on foot in 1½ hours; temp. -25° to -19°C, cloudy, wind NW 15 kmph; 25 cm. snow, 14 species, 4842 individuals. — Wayne Harris.

LEADER. Dec. 30; 20 miles by car in ¾ hour and 5 miles on foot in 2½ hours; temp. -20°C, wind 25 kmph; 7 species, 153 individuals — Bob Godwin, Ken Lumbis.

LEADER. Dec. 26; 4 hours in the field; temp. 2°C, clear, calm, 5 cm snow; 6 species, 65 individuals. — Daisy D. Meyers.

LUSELAND. Dec. 28; 23 miles by car a mile on foot; temp. -12°C, snowing reduced visibility; 13 species, 273 dividuals. — Kim Finley.

MacDOWALL. Dec. 31; 25 miles by ca hours; temp. -23°C, clear, calm; 8 spe 65 individuals. — John, Mary, and Sta Shadick.

MAIDSTONE FERRY (21 miles nort Maidstone). Dec. 22; 35 miles by car hours and 3 miles on foot in 2 hours; t -20° to -9°C, broken cloud, wind S kmph; 18 cm. snow; 19 species, 117 dividuals. (Add: Common Raven, 1, 20; Tree Sparrow, 1, Dec. 21) — W Harris, Sheila Lamont.

MOOSE JAW. Dec. 27; 137 miles by and 2½ miles on foot; temp. -12°C, light; almost no snow. 13 species, 297 dividuals. (Add: Lapland Longspur, 3, 31; Hairy Woodpecker, 1, Dec. 28 Doug Francis, Ruth Hilling, John Ho Pat Kern, Leith and Cy Knight, M Lewis, Molly Ritchie, Jean Thomson.

PIKE LAKE. Dec. 27; 29 miles by car i hours; temp. -15°C, overcast, calm species, 492 individuals. — Mr. and M. E. Christensen, John and Sta Shadick.

PUNNICHY. Dec. 19; 50 miles by car hour; temp. -15°C, overcast, light wi species, 33 individuals. (Add: Rock D 36, Jan. 2; Black-capped Chickadee, 1 2) — Ronald Hooper.

RANCH LAKE. Dec. 20; around farm 8 species, 72 individuals — Mrs. Si Rice.

RAYMORE. Dec. 26, 65 miles by car hours and 8 miles on foot in 6 hours; t -16° to -5°C, cloudy with light to h snowfall, wind SE 30 kmph; 18 cm sno species, 2486 individuals. (Add: Nort Shrike, 1, Dec. 27; Evening Grosbeak, 22, Dec. 28 to Jan. 2) — Chas., Greta Wayne Harris, Sheila Lamont.

REGINA. Dec. 27; 561 miles by car in hours and 43 miles on foot in 28½ h plus observations at feeders; temp. to -10°C, partly cloudy, wind N 15 t kmph; 38 species, 6321 individuals. (White-breasted Nuthatch, 1, Jan. 2 Gary Anweiler, Jessie Bailey, Mar Belcher, John Beveridge, Mr. and Tom Beveridge, Eric Cooke, Bob Co Betty Cruickshank, Robyn Donison, D Duffus, Maureen DuWors, Sam F Wayne Gemmell (compiler), Ch Harper, Al Harrison, John Heinek, Hines (compiler), Elizabeth Johnson and Shirley Jowsey, Darlene Kauk, Kraetzig, Bob Kreba, Eric Lang, Tony L

CIES RECORDED FROM MORE THAN ONE LOCALITY ON COUNT DAY.

	Pike Lake Dec. 27	Punnichy Dec. 19	Ranch Lake Dec. 20	Raymore Dec. 26	Regina Dec. 27	Round Lake Jan. 1	Saltcoats Jan. 2	Saskatoon Dec. 26	Skull Creek Dec. 25	Snowden Dec. 26	Somme Dec. 29	Spirit Lake Dec. 27	Spring Valley Jan. 1	Tuberose Dec. 26	Turtle Lake Dec. 20	Waseca Dec. 29
da Goose					1075											
ard					450	19		84								
vall					2			1								
ead					1			2								
r Scaup					6	3		3								
mon Goldeneye					2	3		207								
mon Merganser								1								
awk																
en Eagle					1								1			
lcon																
e Falcon					1											
n	1				4											
d Grouse				4			3	9				6			2	4
-tailed Grouse	6			40	1		39	111				3	36			6
necked Pheasant								7	2							
Partridge	6			6	110	18	2	65			12	28	41			
Dove				91	308			475	4				32	2		
Horned Owl		1	1	2	4	1		4			1	1				
y Owl					9								3	6		
eared Owl					3								1			
Woodpecker	2		2	4	2	4	4	3			1	6				3
y Woodpecker	3		2	2	10	4	3	23	3	1	1	7			1	4
ed Lark				11	5						1	4	78			
lay	2									2	1	4			4	
lay	1					1	1	19			2				4	6
billed Magpie	18	1	4	52	68	6	5	369	14	3	12	14	6	1	2	6
non Raven										3	3	1			5	1
p Chickadee	29		4	20	27	14	18	171	12	9	3	21			30	10
l Chickadee											1					
easted Nuthatch						2	1	1			2	2				
asted Nuthatch					2			2								
Creeper											1					
can Robin					1											
nian Waxwing	250		26	64	333			5166					74			
Waxwing					1											
ern Shrike					1											
g				6	10			65								
Sparrow	24	10	25	1530	3407	25	64	2059	75	8	15	216	270	15		15
g Grosbeak			8		6	50	20	23				2				
Grosbeak				5		12		7				2				
Redpoll					8			4								
on Redpoll	150	20		47	50	200		487	50							2
Bunting				602	401	150	80	78			50	6	465		34	25
Species		1			7					1						
pecies	12	5	8	16	38	16	12	27	7	7	15	16	11	4	8	11

SPECIES RECORDED FROM MORE THAN ONE LOCALITY ON COUNT D

	Wauchope Jan. 1	Webb Jan. 1	White Bear Dec. 30	Whitebeech Dec. 26	Wolseley Dec. 25	Wynyard Dec. 31	Yorkton Dec. 27
Canada Goose							
Mallard		11					
Gadwall							
Redhead							
Lesser Scaup							
Common Goldeneye							
Common Merganser							
Goshawk							
Golden Eagle							
Gyrfalcon							
Prairie Falcon							
Merlin		1					
Ruffed Grouse							
Sharp-tailed Grouse	19	19	18				21
Ring-necked Pheasant			2				
Gray Partridge	7	30	43			16	
Rock Dove	17	8					
Great Horned Owl							
Snowy Owl		1					
Short-eared Owl	1	3					
Hairy Woodpecker	1			2	1	1	
Downy Woodpecker	4			2	1		1
Horned Lark		240					
Gray Jay				4			1
Blue Jay							
Black-billed Magpie	6	15	24	2	5	7	1
Common Raven				2			
Bl.-cap Chickadee	16	3		5	3	4	5
Boreal Chickadee							
W-breasted Nuthatch							
R-breasted Nuthatch							
Brown Creeper							
American Robin							
Bohemian Waxwing		8				89	25
Cedar Waxwing							
Northern Shrike							
Starling							10
House Sparrow	50	150	60		100	350	30
Evening Grosbeak					1		
Pine Grosbeak						3	
Hoary Redpoll	1	6					
Common Redpoll	70	34				108	
Snow Bunting	140	540	15		1		
Single Species					1		
Total Species	12	15	6	6	8	8	8

CIES RECORDED FROM ONLY 1 LOCALITY ON COUNT DAY.

Species	*Locality*	*Map No.*
Pintail	Regina	36
Canvasback	Regina	36
Ruddy Duck	Regina	36
Peregrine	Indian Head	21
American Coot	Regina	36
Glaucous Gull	Gardiner Dam	16
Mourning Dove	Regina	36
Long-eared Owl	Fort Walsh	14
Common Flicker	Regina	36
Pileated Woodpecker	Emma Lake	10
Northern Three-toed Woodpecker	Fort Walsh	14
Common Crow	Punnichy	33
Townsend's Solitaire	Fort Walsh	14
Golden-crowned Kinglet	Fort Walsh	14
Western Meadowlark	Kindersley	24
Redwinged Blackbird	Fort Walsh	14
Brewer's Blackbird	Wolseley	52
Common Grackle	Moose Jaw	31
Purple Finch	Regina	36
Gray-crowned Rosy Finch	Fort Walsh	14
Pine Siskin	Snowden	41
Red Crossbill	Fort Walsh	14
White-winged Crossbill	Fort Walsh	14
Dark-eyed Junco	Fort Walsh	14
Tree Sparrow	Fort Walsh	14

ge Ledingham, Bob Luterbach, Eric n, Juan Martinez, Helen Morrison, Neufeld, Rory O'Hagan, Connie Kathy Reid, Joe Roberts, Anneke mens, Bill Russon, Rick St. Pierre, Seib, Rodi Shaw, Barbara Shourounis, and Diane Smith, Frank Switzer, Dale Brenda Weisbrot, Christophe elm, Pierre Wilhelm.

ND LAKE. Jan. 1; 57 miles by car 1¼ miles on foot; temp. -20°C, calm; nd lake and at feeders; 16 species, 512 viduals. — Doug Francis, Bill leton.

TCOATS. Jan. 2; 36 miles by car in 3¼ s and at 3 feeders; temp. -21° to -14°C, sunny; 12 species, 240 individuals. — rt Barnhart.

KATOON. Dec. 26; 312 miles in 48 s by car and 78 miles in 50 hours on temp. -14° to -10°C, wind ESE 18 to 20 n, overcast with light snow; 27 es, 9446 individuals. (Add: Merlin, 2, 27; Common Flicker, 2, Dec. 25; hern Shrike, 2, Dec. 27; Dark-eyed o, 1, Dec. 27) — Mark Abley, Mary y, Bruce Arthur, Bob, Garth, Jeff and Besant, Ron Bobowski, Janny Bos, el and Ron Bremner, Don Buckle, Ian rer, Bruce Donovan, Dick, Mark and Susan Ehman, Cliff and Doug Findlay, Bernie, Madeleine and Michael Gollop, Jack and Louise Greaves, Eleanor Hanna, Andrew and Charles Hope, Clarence, Marg, Mary, Stan and Stuart Houston, Venta Kabzems, Mr. and Mrs. Erling Larsen, Ted Leighton, Keith Martens, Don and Jo McRobbie, Greg Michalenko, Mary Lou Monks, Alverta and Sean Morrisey, Betty Mundy, Arnold Nijssen, Geralyn, Lynn and Paul Oliphant, Jim and Pat O'Neil, John Polson, Wayne Renaud, Adam and David Schmidt, John and Stan Shadick, Jim Slimmon, Allan, Edward and Gary Smith, Mary Strickland, Guy Wapple, Jim Wedgwood, Doug Whitfield, Jim Wood.

SKULL CREEK. Dec. 25; on foot 4 miles and around farmyards; light Chinook winds and almost no snow; 7 species, 160 individuals. (Add: Golden Eagle, 2; Prairie Falcon, 2; Sharp-tailed Grouse, 25; Gray Partridge, 2; Snowy Owl, 1; Bohemian Waxwing, 30, Snow Bunting, 70) — Jim Bennetto, Betty, Marjorie and Patty Mann, Don Pearce.

SNOWDEN. Dec. 26; 7 miles by car and 5 miles on foot; temp. -25°C, winds light, overcast; 7 species, 55 individuals. — D. Jacura, J. Soroka.

SOMME. Dec. 29, 55 miles by car in 2 hours; temp. -25°C, partly cloudy, wind 30 kmph; 15 species, 106 individuals. (Add: Ruffed Grouse, 1; Sharp-tailed Grouse, 13, Dec. 26; Evening Grosbeak, 1; Pine Grosbeak, 6; Common Redpoll, 2) — Gordon Banks, David Black, David Hooper, Donald Hooper, Ronald Hooper, J. Litton.

SPIRIT LAKE. Dec. 27; 57 miles in 4 hours by car, 4 miles in 1½ hours on foot and 4 miles in ½ hour by snowmobile; temp. -28° to -18°C, wind NW light to 15 kmph, clear with cloudy periods; 16 species, 323 individuals. (Add: Bohemian Waxwing, 4, Dec. 24; Common Redpoll, 1, Dec. 24)— Bill and Joyce Anaka.

SPRING VALLEY. Jan. 1; 49 miles by car in 3½ hours and 1 mile on foot in ¾ hours and around 2 yards; temp. -22° to -19°C, wind light to calm; 15 cm snow; 11 species, 1007 individuals. (Add: Prairie Falcon, 1, Dec. 26; Common Crow, 1, Dec. 30; Northern Shrike, 1, Dec. 26; Common Redpoll, 16, Dec. 19; Lapland Longspur, 1, Dec. 30) — Allan and Adeline Bogdan, Flossie, Larry and Nick Bogdan.

TUBEROSE. Dec. 26; 34 miles by car in 1¼ hours; temp. +4°C, calm; light snow cover; 4 species, 24 individuals. — Cliff Matthews.

TURTLE LAKE. Dec. 20; 9 miles by skis and jeep; temp. -8°C, overcast; fresh snow; 8 species, 88 individuals. (Add: Lapland Longspur 6) — Donald, Lori, Lynn and Muriel Carlson.

WASECA. Dec. 29; Lamont and Pike farmsteads plus Big Gully marsh and roadsides; temp. -12°C, calm in P.M.; 11 species, 82 individuals. (Add: Gray Jay, 1; Pine Grosbeak, 25) — Hans de Vogel, Joyce and Tom Lamont, Christine Pike.

WAUCHOPE. Jan. 1; 25 miles by car and ½ mile on foot in 2 hours; temp. -10° to -15°C, clear, calm; 13 to 15 cm snow; 12 species, 332 individuals. (Add: Great Horned Owl, 1, Jan. 2; Snowy Owl, 1, Dec. 25; Horned Lark, 5, Dec. 31; Evening Grosbeak, 1, Dec. 25) — Dale Hjertaas.

WEBB. Jan. 1; 160 miles by car in 7 hours and 2 hours on foot; temp. -20°C, overcast, light wind; fresh snow on ground; 15 species, 1069 individuals. (Add: Ringnecked Pheasant, 4, Dec. 19; Downy Woodpecker, 1, Jan. 2) — Murray Christman, Bob Peart (compiler).

WHITE BEAR. Dec. 30; 5½ miles on foot; temp. -12°C, overcast, wind W 25 kmph, light snow falling; 6 species, 162 individuals. — Orin Cates, Bill Fox, Gary, Gerald, Laine and Sig Jordheim, David and Mark Lowe, Doug Stepples.

WHITEBEECH. Dec. 26; 4 miles on fo wooded area in 3 hours, and at fee station; temp. -17°C, cloudy; 12 cm sr 6 species, 17 individuals. (Add: Snow ting, 110, Dec. 29). — Lindsay Woth poon.

WOLSELEY. Dec. 25; around farm an car in neighboring area; temp. -8°C, light; 10 cm snow, 8 species, 113 dividuals. (Add: Sharp-tailed Grous Dec. 20; Great Horned Owl, 1, Dec Horned Lark, 25, Jan. 2, Bohemian wing, 31, Dec. 18) — J. Donald Hayw

WYNYARD. Dec. 31; temp. -21°C, c wind E 5 to 20 kmph; snow cover less t cm; 8 species, 578 individuals. — John Sherry Gulley.

YORKTON. Dec. 27; temp. -24°C, p overcast, calm; 8 species, 94 individua Margaret Bromley, Phil Pawluck.

FORT SMITH, N.W.T. CHRISTMAS BIRD COU

DATE: December 26, 1976

WEATHER: Sunny and clear wi few broken clouds; tempera minus 25° celsius; calm; snow d approx. 20 cm; daylight 0900- hours.

ROUTES COVERED: Fort Smith along highway 5 to Fox Holes roa tersection; Fort Smith south a Pine Lake road to Salt River; Smith east along Hay Camp roa Wood Buffalo National Park bor Total 160 km by car in 3.5 hours

BIRDS SEEN: Gyrfalcon, 1; Sp Grouse, 7; Ruffed Grouse, 3; Wi Ptarmigan, 11; Hawk Owl, 1; H Woodpecker, 1; Gray Jay, 7; C mon Raven, 191; Boreal Chickade House Sparrow, 1; Pine Grosbea (Add: + 100 snow buntings December; 2 hoary redpo December.)

CONTRIBUTORS: Dan Gra (compiler), Linda Graham, Dr. Ma Jalkotzy, Blair and Linda Dunbar and Nancy Church, Harold Pank Nem and Doug Grainger, R Checkley, Frank and Pat Allison, and Jan Lentowitz, Bernie and Lieff, Mickey and Ann Har Audrey Jessiman.

INTER BIRD OBSERVATIONS AT RANIUM CITY, SASKATCHEWAN, 69-1976

TTO HOHN, Department of Physiology, University of Alberta, Edmonton

W. Nero gave a detailed account, ding a review of previous work, e avifauna of the Lake Athabasca on.[1] However, Nero's visits were ned to the summer; for informa- on winter occurrences he had to on other observers.

anium City, including nearby ell and Eldorado, has a very cted winter bird life; my obser- ns made in the course of six trips een late November and late h over a seven-year period add species and suggest that the s of a few others should be fied. My visits were as follows: 9-31, 1969; Jan. 27-30, 1970; Nov. , 1971; Dec. 18-21, 1972; Jan 28- 975 and Mar. 25-29, 1976. They made to secure live Willow Ptar- n on a special permit for a con- ng research project.

s short list of birds is essentially ned to winter status with com- s on Nero's summary of this in where my observations suggest fication.

AWK: One seen successfully ring a Willow Ptarmigan on Nov. 27, a glimpse of a hawk, probably this s, perhaps the same bird, was made v. 29, 1971. Nero calls it a common nent resident.

OW PTARMIGAN: One or a few flocks of 4-8 birds seen on all visits in 1969 when only recent tracks een. I was driven on most visits over all roads in the area and, though ptarmigan were commonly seen, birds were never numerous.

PTARMIGAN: Nero gives five s of Rock Ptarmigan shot in the area specimens were obtained) in the 1957-1961. In March, 1976, Mr. y" MacDonald, a Uranium City In- howed me a frozen male Rock Ptar- migan among nine Willow Ptarmigan which he had shot locally during the preceding November. The records in toto suggest that this species is a regular winter visitant in very small numbers.

DOWNY WOOKPECKER: The only woodpecker observed; single birds were seen in two different areas in late March, 1976.

COMMON RAVEN: The only winter bird which is truly common (for so large a bird) both in the settlements and at least for some miles from them. Among other activities they scavenge food from dogs in Uranium City. On my only visit to the town Garbage dump (Dec. 20, 1972) there were about 50 ravens there.

GRAY JAY: A few were seen in the course of all visits.

BLACK-CAPPED CHICKADEE: This is the only chickadee I saw in the area, one on Nov. 27, 1971 and several on Mar. 27, 1976. Nero gives its status as "a fairly common summer resident." No doubt the Boreal Chickadee is a winter bird of the area too but it appears to be even scarcer than the Black-capped.

BOHEMIAN WAXWING: One seen Jan. 28, 1970; this suggests that it may be a permanent rather than merely a summer resident.

NORTHERN SHRIKE: Not listed by Nero and thus there are presumably no previous records for nothern Saskatchewan. One seen at Eldorado, Nov. 27, 1971, flushed some Redpolls but did not pursue them.

HOUSE SPARROW: A few, up to 10 on one occasion, were seen on all visits but only in Uranium City, never at Eldorado or Bushell. It may have decreased since the early 1960's; Nero considered it a fairly common permanent resident. However, even then it only had that status at Uranium City.

PINE GROSBEAK: Five were seen by my

companion, Mr. D. Dekker, but only heard calling by myself on Nov. 29, 1971, at Eldorado.

HOARY REDPOLL: At least three flocks, each of up to 20, were seen during a walk from Eldorado to Uranium City, Nov. 26, 1971. Nero rates this species a rare transient; it appears rather to be a frequent, probably even a regular, winter visitor. Redpolls, not seen at sufficiently close range to distinguish between this and the Common species, were also seen on Dec. 18, 1972, and a small flock and single birds in late March, 1976.

RED CROSSBILL: On March 27, 1976, I caught glimpses of and heard the mistakable call of a few of these bird the edge of Uranium City. Nero report Mar. 7 record. They are probably per nent rather than only summer reside

SNOW BUNTING: A small flock was along the Uranium/Eldorado road, 29, 1971.

[1]NERO, R. W. 1963. The birds of the Athabasca region, Saskatche Specl. Pub. No. 5, Sask. Natl. Soc., Regina.

Black-capped Chickadee Lorne

OLITARY VIREO
REEDING BEHAVIOUR

SS BARCLAY, Department of Biology, University of Saskatchewan, katoon, Saskatchewan

is always interesting to discover a d's nest, particularly when the cies is one not previously en- ntered and when detailed obser- ons are possible. Such an oppor- ty presented itself on June 19, 6, at the University of katchewan Arts Camp at Emma e, Saskatchewan, when a Solitary o nest, 12 m from the Biology oratory was brought to my atten- by Dr. Maureen Rever. A arkable characteristic of this bird its tolerance of human beings. when closely approached on the , the female showed little alarm, ing observation a relatively sim- matter. (A second active nest was located within the Emma Lake Camp. It was almost directly hanging a path. Few observations e made at this site, however, use the eggs disappeared early in bation, probably the work of a dator.)

he Solitary Vireo breeds in atchewan from Prince Albert h, except for the northeast corner he province.[2] Farley Mowat stated that "a single bird was collected uly 9, 1939, in our aspen grove" at na Lake.[4] The preferred habitat of Solatary Vireo is open mixed con- ous and deciduous forests. These nests were found in a mixture of bling aspen, white birch and e spruce. In both cases the nests e located within 15 m of a ding, showing their tolerance to . Nevertheless, it is not a sociable it seldom nests in shade trees of ges or in city parks, preferring the usion of forests.

n several occasions I was able to ograph the nests from as close as m without apparently frightening incubating female. Later, the e nest was inspected more closely the eggs measured. The female not leave the nest until I ap-

Solitary Vireo on nest Ross Barclay

proached to within a meter of her. Even then she remained within two or three m of the nest, sitting on a branch, repeating a nasal, scolding squawk. Several seconds after leaving the nest she was joined by the male, who gave the same incessant alarm cry. This continued until I had left the vicinity of the nest; no attacks were made on me. After I had retreated further the parents fell silent and the female flew to a twig several centimeters above the nest. After a few moments she dropped to the edge of

the nest and settled upon the eggs as calmly as if nothing had happened.

The nest itself, like those of other vireos, is a low hanging basket. One was constructed in the fork of a twig on a white birch three m above the ground. The other was hung at approximately the same height in the fork of a twig on a Black-fruited Chokecherry tree.

Both nests consisted of an inner cup lined with fine grasses. This had a diameter of about 6.2 cm and a depth of 5 cm. The outer shell was constructed primarily of small strips of the thin outer bark of white birch, plus small quantities of a cotton-like substance as well as pieces of foliose lichen.

The Solitary Vireo normally lays from three to five eggs.[1] Usually there are four, which was the number in the nest which had not been predated. The eggs were ovate in shape, but somewhat pointed. They were nearly pure white, with tiny chocolate brown spots, few in number and more densely distributed near the large end. Using a micrometer scale, the measurements of the four eggs, in millimeters, were as follows: 20.8 by 14.7, 21.2 by 14.8, 20.5 by 14.5, and 20.6 by 14.6. Each egg was larger than the average given for the species in the eastern United States — 19.5 x 14.4.[3]

No definite information regarding the period of incubation appears to be available. However, it is believed to be from 11-14 days.[3,5] Unfortunately, these two nests were found some time after the eggs had been laid, and I was unable to be present when they hatched, so the incubation period could not be determined.

Both parents shared incubation. In most cases when the nest was observed, the female was incubating, indicating that she performed the greater share of the incubation. When one of the parents did leave the nest, presumably to feed, the other took over the task of inc tion. This switch was observed t In the first case, the male appe and flew from branch to branch, ing at each perch for several sec After a few minutes he flew t nest and landed on the edge whereupon the female left and out of sight. The male then beg incubate.

In the second case the male w cubating. The female returned landed on a branch near the nest male then left the nest and went nearby branch. He perched ther a few seconds and then flew a The female waited about one mi before entering the nest.

One can easily see that the Sol Vireo is an interesting little bir study. Any observation is boun yield interesting new informatio its ecology. Because of the reclu nature of this bird and the fact t is not abundant in Saskatchewan, should avail himself of every op tunity to study the Solitary Vireo

[1]BENT, A. C. 1950. Life historie North American wagtails, sh vireos and their allies. D Publications, New York. 411 pp.

[2]Godfrey, W. E. 1966. The birds of Ca Queen's Printer, Ottawa, 428 pp.

[3]Harrison, H. H. 1975. A field guide to nests. Houghton, Miffin, Boston.

[4]MOWAT, F. M. 1947. Notes on the of Emma Lake, Sasktachewan. Field-Nat. 61:105-115.

[5]REILLY, E. M., Jr. 1968. The Aud illustrated handbook of American McGraw-Hill, New York. 524 pp.

mon Crow Fred Lahrman

D CROWS SAY CAW?

DR C. FRIESEN, Box 65, Rosthern, Saskatchewan S0K 3R0

a commonplace that crows say Thus Taverner says nothing of ry of our Common Crow but merely to its "familiar voice."[12] rly, Chapman includes the voice as one of its traits which to make the crow the "best n of our birds." The voice is a , open *caw,"* he says, and he ap- tly has listened to it carefully, distinguishes this sound from ade by another member of the dae family, the Fish Crow.[3] ers made the same distinction till described the Common s voice as *"caw", "cah"* or *"ca-*

trouble with this commonplace from my childhood, some 35 ago, I could never once hear crow says *caw.* To my ear it says ith an explosive initial vowel, it but the *c* is just not present. I mentioning this fact to one of deschool teachers in the 1940's and, since that time, to some other bird watchers. Upon close listening, they have agreed with what I have heard. Meanwhile, because I grew up on a farm and continue to live there each summer, I have had ample opportunity to continue to hear crows cawing—or, rather, *"a*wing."

A few years ago I spent a good part of an afternoon playing and replaying Band 1, Side 4 of *A Field Guide to Western Bird Songs*[6] to someone with a trained musical ear. Although we played the record at various speeds, neither of us could hear the initial *c* of the crow's *caw.*

Lately I have been examining again the comments about crows in present-day bird guides. My own observations (that is, auditions) seem to receive little support. Peterson says crows make a "loud *caw* or *cah* or *kahr,* easily imitated"[8]; Pough speaks of their *"ca-ah, ca-ah, ca-ah"* known

Migrating crows Gary W

by everyone[10]; and Godfrey writes of their "familiar *caw.*"[5]

Even authors concerned solely with bird songs refer to crows' cawing in a similar manner. Although Mathews takes pains to shatter one commonplace about crows (that their color is *not* black but rather an iridescent steel-blue!) he hears their cry—whether it be a *"cr-r-r-r-r-uck,"* a *"caw, caw, caw,"* or a *"ca-cak-ca-caw"*—always beginning with consonant *c*. He then gives musical notation of these calls o treble clef.

In another such study Arms cites the mimic qualities of our Old World cousins, the Carrion the Hooded Crow, and the R These birds, according to Pete Mountfort and Hollom, have calls of *"kraa"* or *"kaw."*[9] Sinc

start with a *k*-sound, could it be sible that when immigrants came our land and first saw our native v they simply assumed, or hearing hat it too said a kind of *caw?*

f course, crows are quite capable aying *caw.* Forbush and May have nted out that crows have the nx of a singer and so can produce riety of sounds, including a dog's ne, a hen's squawk, or a rooster's wing.[4] Bent refers to their perior imitative faculties" and ability to mimic human sounds.[2] y farm boys, indeed, have had crows that could talk. And talking s, or their relatives, have become of our folklore—from "The Twa ies" of the medieval English d who discuss their plans to pick n the bones of knights slain in e—to the crows, three in number time, of the toned-down rican folksong "Billy Magee aw," where the birds choose to on slain horse. Here the birds say three times before repeating the 's title. Certainly, crows can ic a *caw* as well as human speech.

nt goes on to quote several sentative authors in order to us a well-rounded concept of s' cawing.[2] Again, the writers listened closely, for we learn Allen about the rhythm of the ; from Wright about the times of first being voiced each morning; Hoffmann, Knight, and Forbush t the accents placed on various to indicate the meaning of that d. Only Townsend, writing nally in 1923, speaks of such com- modifications of the crow's call *rr, orr"* and *"ou, ahh, ahh, ahh,"* ne with my own experience. send continues: "The conver- nal notes of a small group or of Crows are always enter- g, and the observer is impressed the extensiveness of their bulary and the variations in their gs."

w that the Common Crow is us in numbers once more at the of this summer season, the rs of the *Blue Jay* might well again with fresh ears to what the bird is in fact saying, keeping in mind that

To be a fine student of ornithology
And study our crows and their philology
Is to listen to them caw,
To oneself say, "Ah-hah!
This subject is surely one of phonology."

If crows normally do utter both a *caw* and an *aw,* which call is the more prevalent?

[1]ARMSTRONG, E. A. 1973. A study of bird song. Dover, New York, (pp. 81, 83, 110).

[2]BENT, A. C. 1964. Life histories of North American jays, crows, and titmice, part II. Dover, New York (republication of U.S. Nat. Mus. Bull. 191), (pp. 247-249).

[3]CHAPMAN, F. M. 1966. Handbook of birds of eastern North America. Dover, New York, (pp. 391-392).

[4]FORBUSH, E. H., and J. B. MAY, 1939. A natural history of American birds of eastern and central North America. Houghton Mifflin, Boston, (pp. 344-345).

[5]GODFREY, W. E. 1966. The birds of Canada. Nat. Mus. of Canada Bull. 203, Ottawa, (p. 275). (428 pp.).

[6]Laboratory of Ornithology, Cornell University. 1962. A field guide to western bird songs (3 records). Houghton Mifflin, Boston.

[7]MATHEWS, F. S. 1967. Field book of wild birds and their music. Dover, New York, (p. 47).

[8]PETERSON, R. T. 1961. A field guide to western birds. Houghton Mifflin, Boston, (p. 210). (366 pp.).

[9]PETERSON, R. T., G. MOUNTFORT, and P. A. D. HOLLOM (n.d.) A field guide to the birds of Britain and Europe. Houghton Mifflin, Boston, (pp. 197, 200, 202).

[10]POUGH, R. H. 1949. Audubon land bird guide. Doubleday, Garden City, N.Y., (p. 87). (312 pp.).

[11]SAUNDERS, A. A. 1951. A guide to bird songs. Doubleday, Garden City, (p. 105). (307 pp.)

[12]TAVERNER, P. A. 1938. Birds of Canada. Musson, Toronto, (p. 307). (446 pp.)

OSPREY NESTING RECORDS IN SASKATCHEWAN

C. S. HOUSTON, 863 University Drive, Saskatoon, Saskatchewan,
J. M. GERRARD, D. W. A. WHITFIELD, H. A. STELFOX and W.J. MAHEF

Elsewhere in North America, particularly along the Atlantic coast of the United States, the Osprey has undergone a serious reduction in nesting success followed by a decline in numbers.[6] There is strong circumstantial evidence that this decline was caused by the coincident increase in biocide levels of the aquatic environment. As a result, the Osprey has become one of several species watched closely by naturalists as sensitive indicators of toxic substances in our environment.

Until recently there was little published information on the status of the Osprey in Saskatchewan. With the report by Scott and Surkan of a local Osprey concentration in the Loon Lake area, we thought it might be useful to review available Saskatchewan breeding records of this species.[7]

An observer's name, without reference to a publication, refers to a personal communication from that person. The nests are listed chronologically.

1914. Cowan Lake, north end. Female collected at nest, May 13, 60 ft. in broken off dead spruce. Buchanan[1]. (Location #1 on map).

1914. Lake Ile-a-la-Crosse. Nest, 1 egg, May 25. Buchanan[1]. (#2).

1914. Knee Lake, east end. Nest, 2 eggs, June 6. Buchanan[1]. (#3).

1914. Sandy Lake. Active nest, June 10. Buchanan[1]. (#4).

1939. Montreal Lake. Nest reported on island. Mowat[4]. (#5).

1956. Candle Lake. Nest on island. July. Street[3]. (#6).

1956. Round Lake, ne. of Kelvington. Active nest, first week of May. (#7). Anton Waycheshen.

1957. Round Lake, ne. of Kelvington. adults near above nest in sp (#7). Anton Waycheshen.

1958. Nipawin Provincial Park. Str (#8).

1960. Stewart Island, Lake Athab Nest, 2 young, July 20, 20 ft. topped white spruce[5]. (#9).

1960. Torch River, 18 mi. n. and 6 mi. Nipawin. Active nest, June 10. in jackpine in burnt over Street[8]. (#10).

1963. Upper Makwa Lake, west shore cupied yearly through 1968. Scott. (#11).

1963. Ministikwan Lake, island at end. Harry Graham. Occupied ly since. (#12).

1964. Round Lake, ne. of Kelvin Adult on nest, April 27. Waycheshen. (#7).

1964. Cree Lake. Island 2½ mi. Turner Island. 40 ft. at to jackpine. Davis[2]. (#13).

1964. Cree Lake. Peninsula in Lazy Ed Bay. 35 ft. at top of black sp Davis[2]. (#14).

1964. Cree Lake. Entrance to Lazy Ed Bay. Top of 45 ft. jackpine. 2 y flying by mid-August. Davis[2].

1965. Cree Lake. Entrance to Lazy Ed Bay. Same nest as 1964. 4 y banded by Houston[2]. (#15).

1965. Ministikwan Creek, north of M Lake. Occupied yearly since. Scott. (#16).

1966. Shirley Lake. Female collecte museum, June 9-10. Nest 65 dead tree in old burn. G. Anw (#17).

1967. Red Deer River, east of Algr adults at large nest, May 29. Waycheshen. (#18).

1967. Anglin Lake. 1 young band leaning dead spruce, 45 ft. up. field & Gerrad[9]. (#19).

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108°
107°
106°
105°
104°
103°
W E S T T E R R I T O
M A C K E N Z I E
ATHABASCA
Uranium City
Eldorado
Fond-du-Lac
Stony Rapids
Wollaston Lake
Cree River
Cree Lake
Stony Narrows
REINDEER
Kinosao
SASKATCHEWAN
PRINCE ALBERT NAT. PARK
16th Base Line
15th Base Line
14th Base Line
Saskatoon
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1967. Rightangle Lake. 2 young banded, 36 ft. in dead spruce, July 15. Whitfield & Gerrard[9]. (#20).

1967. Upper Foster Lake. In dead tamarack. Bill Richards[8], and Cyril Mahoney.[9] (#21).

1967. Reindeer Lake. Nest on rock in lake. Dave McLay.[9] (? exact location).

1968. Maurice G. Street Wildlife Sanctuary, e. of Nipawin. Active nest in flooded dead tree. S. D. Riome. (#22).

1968. Florence Lake, west end. On power pole, power line to Sherridon. At least 1 young. Whitfield & Gerrard, (#23).

1968. Rightangle Lake. At least 1 young, July 7. Whitfield & Gerrard. (#20).

1968. Anglin Lake, same nest as 1967. Active July 11; deserted and empty July 19. Whitfield & Gerrard. (#19).

1968. Hunter Bay, Lac La Ronge. Nest on geodesic survey tower. 2 young, July 9; 2 flying young, Aug. 24. Whitfield & Gerrard. (#24).

1968. Hebden Lake. Geodesic survey tower. At least 1 young. July 9. Whitfield & Gerrard. (#25).

1968. Upper Foster Lake. At least 2 young, 30 ft. in dead tamarack, July 11. Cyril Mahoney had noted this nest occupied about 1945. The tree fell in 1969. Whitfield & Gerrard. (#21).

1969. Florence Lake. An adjacent power pole to 1968 nest. I adult and possibly 1 small young July 2. There were another 12 active nests and 12 empty nests along 45 miles, Within Manitoba, of this branch power line to Sherridon. Whitfield & Gerrard. (#23).

1969. Hunter Bay, Lac La Ronge. Same geodesic tower as 1968. Female incubating in May, but nest empty in July. Whitfield & Gerrard. (#24).

1969. Hebden Lake. Geodesic tower as in 1968. At least 1 young July 12. Whitfield & Gerrard. (#25).

1969. Sturgeon Bay, Amisk Lake. 2 young, top of live black spruce, July 4. Whitfield & Gerrard. (#26).

1969. Russell Bay, Lac La Ronge. 3 young in dead black spruce, July 15. Whitfield & Gerrard. (#27).

1969. Upper Foster Lake. New nest in live black spruce, 2 young, July 18. Whitfield & Gerrard. (#21).

1969. Unser Lake. At least 1 young i spruce, July 10. Whitfield & G (#28).

1969. Pelletier Lake. One adult at dead spruce July 8. Whitfi Gerrard. (#29).

1969. Fisher Lake. Geodesic tower. tained eggs, but then empty J Whitfield & Gerrard. (#30).

1969. Maurice G. Street Wildlife San e. of Nipawin. Same dead t 1968. 2 young, July 20. S. D. (#22).

1970. Maurice G. Street Wildlife tuary. At least 1 young. G. An (#22).

1970. Tulibee Lake. 6 mi. w. of Loo village. Occupied yearly since Scott. (#31).

1971. Kazan Lake (4 mi. E.). Nest i spruce, incubating June 14. C. M. Gerrard. (#32).

1971. Lake Ile-a-la-Crosse. Dead on island, incubating June 14 and J. M. Gerrard. (#2).

1971. Churchill Lake, w. side, 9 m narrows. 3 eggs in dead spruc 15. C. D. and J. M. Gerrard.

1971. Churchill Lake, w. side, 17 m Narrows. Dead spruce. Incu June 15. C. D. and J. M. G (#34).

1971. Peter Pond Lake, 4 mi. Narrows. Dead spruce. Incu June 16. C. D. and J. M. G (#35).

1971. Torch River, near Tobin Lak Nixon. (#36).

1972. Near Tulabi Lake, nw. of berland Lake. Adults present on stub in old burn, May Anweiler. (#37).

1973. Lavigne Lake. 2 young ban large flat exposed rock inlak inactive previously used n two other adjacent large rock 150 yards distant. D. Hjertaas A. Stelfox. (#38).

1973. Unnamed lake, south of Irvi Previously used but now i nest on large rock. H. A. (#39).

1973. Swan Lake, se. corner. 3 banded on single large rock D. Hjertaas & H. A. Stelfox.

1973. Swan Lake, se. corner# Nest young banded in nest on

large rock in lake. H. A. Stelfox. (#40).

Reindeer Lake, w. shore opposite Bedford Island. Active nest with 1 egg in flooded dead snag. Thirty yards away was another previously used osprey nest in a similar dead snag; unused and fell down in 1973. H. A. Stelfox. (#41).

Mekisuk Lake. Nest in live black spruce 300 yards from shore. Adults present but no young produced. An inactive nest in another live black spruce 200 yards away. Stelfox. (#42).

Sokatisewin Lake (Island Falls Reservoir). Nest, 3 young, at top of flooded dead spruce snag. Stelfox. (#43).

Sokatisewin Lake. Another nest at top of flooded dead spruce snag produced 1 young. A third nest in a flooded snag was inactive. Stelfox. (#43).

Sokatisewin Lake. One of the above nests produced two young. Stelfox. (#43).

Sokatisewin Lake. The second active nest was unsuccessful. Stelfox. (#43).

Loon Lake area. 15 active nests (including 2 mentioned above). Scott & Surkan[7].

Loon Lake area. 20 active nests. Frank Scott. (#11-12).

Highway 102 at Mile 65. Temporary geodesic tower. 1 young banded by Houston July 22. (#44).

[1]Buchanan, Angus. 1920. Wild Life in Canada. John Murray, London. 264 p.

[2]DAVIS, WAYNE D. 1966. Some observations of birds at Cree Lake, Saskatchewan. Blue Jay 24:80-85.

[3]HOUSTON, C. STUART and MAURICE C. STREET, 1959. Birds of the Saskatchewan River. Sask. Nat. Hist. Soc., Regina, 205 p.

[4]MOWAT, FARLEY M. 1947. Notes on the birds of Emma Lake, Saskatchewan. Can. Field-Nat. 61:105-114.

[5]NERO, R. W. 1963. Birds of the Lake Athabasca Region, Saskatchewan. Sask. Nat. Hist. Soc., Regina. 143 p.

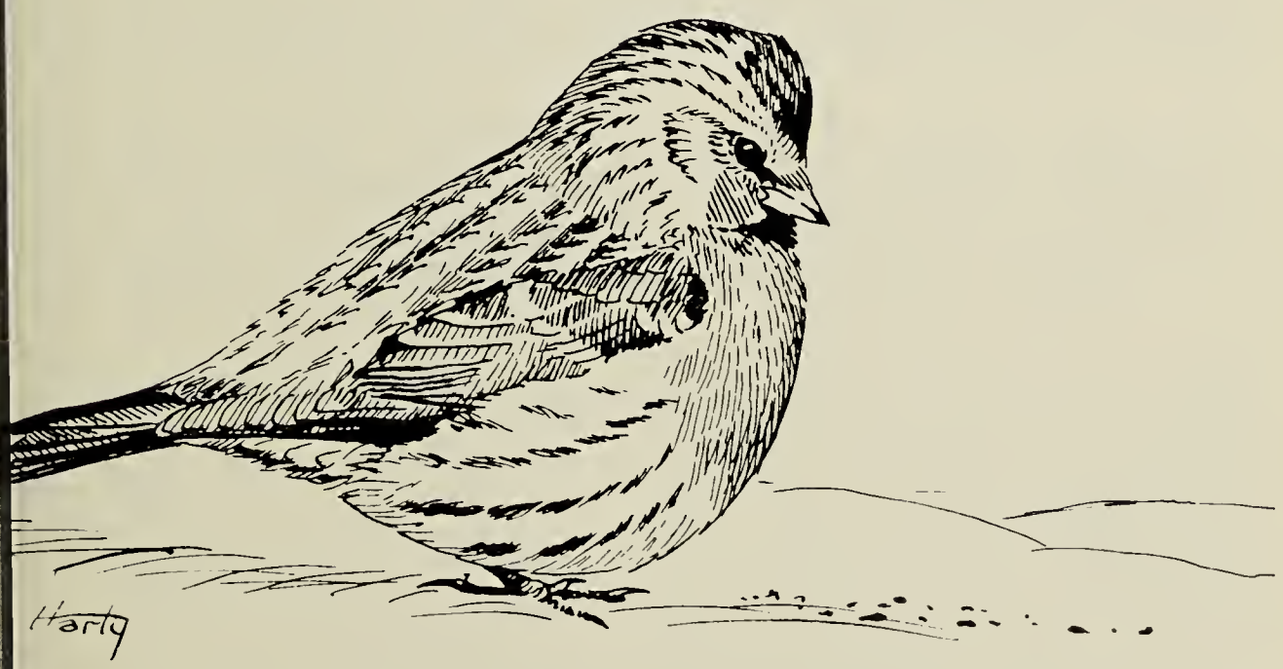
[6]PETERSON, ROGER TORY. 1969. Population trends of Ospreys in the northeastern United States. IN: Peregrine Falcon Populations, Their Biology and Decline. ed. by J. J. HICKEY. Madison: University of Wisconsin Press.

[7]SCOTT, FRANK and DAVID L. SURKAN, 1976. An unsuspected Osprey concentration in west-central Saskatchewan. Blue Jay 34:98-99, 1976.

[8]STREET, MAURICE G. 1960. An Osprey nest at Torch River. Blue Jay 18:121.

[9]WHITFIELD, D. W. A. and J. M. GERRARD, 1967. Bald Eagle banding in northern Saskatchewan (1967). Blue Jay 25: 177-183, 1967.

[10]WHITFIELD, D. W. A., J. M. GERRARD, W. J. MAHER, et al. 1974. Bald Eagle nesting habitat, density and reporduction in central Saskatchewan and Manitoba. Can. Field-Nat. 88:399-407.



Common Redpoll

BLUEBIRDS AND CLEARCUTS

G. A. WILDE, Box 1196, Hinton, Alberta T0E 1B0

The success of bluebird trails in western Canada led me to believe that clearcut areas in the boreal and subalpine forests would provide suitable habitat for Mountain Bluebirds and Tree Swallows if nesting sites were provied.[3] [4] [5] [6] In April 1976, I placed 100 nesting boxes in and adjacent to clearcut areas at Hinton, Alberta. The former status of breeding populations was not known; however, in 1976 nine boxes were occupied by Mountain Bluebirds and two by Tree Swallows. This nearly equals the success of first year bluebird trails in prairie habitat.[4] The major competition for nesting sites was by Red Squirrels *(Tamiasciurus hudsonicus)* and Deer Mice *(Peromyscus maniculatus)*.

The trail is located north of Hinton in the foothills of the western cordilla region (Fig. 1). Elevations range from 1219-1524 m, with an annual precipitation of 400-450 mm and a mean annual temperature of 3°C. It has grey wooded soils with well developed drainage patterns.[1] [2] Previously the forest cover was large homogeneous tracts of Lodgepole Pine *(Pinus contorta)*, Alpine Fir *(Abies lasiocarpa)* and White Spruce *(Picea glauca)*. The area now contains numerous clearcut blocks, some as large as six square miles.

During the summer of 1975, the Junior Forest Wardens constructed 100 nest boxes following directions supplied by Lorne Scott of Regina. In April, 1976, these were erected along the Northwestern Pulp and Po Management Trail (Fig. I). The b were fastened on residual vegeta or posts at a height of 1.0-1.5 m. Th were on opposite sides of the r (approximately 30 m from the r and spaced at 0.5 mile intervals. nesting boxes were monitored May, June and October.

The success of the project greater than anticipated, and with additional 100 nesting boxes for season I am convinced bluebirds swallows will be established in th clearcut areas.

I was pleasantly surprised at lack of vandalism and the absenc competition by House Sparrows Starlings. The two major probl were the faulty construction of nesting boxes and the destructio the boxes by Red Squirrels in a adjacent to Lodgepole Pine stan

[1]Anonymous. 1969. Atlas of Alberta. versity of Alberta, Edmonton.

[2]Anonymous. 1968. Alberta Forest In tory. Alberta Forest Service, Edmo

[3]BURNS, R., D. STAPLEY, R. SUER and K. TRANN, Project nest Edmonton, 1972. Blue Jay 31:89-9

[4]KARGUT, J. 1974. Bluebird proje Langham. Blue Jay. 32:106-107.

[5]PINEL, H. W. and J. C. ROBINSON, Calgary bluebird trail. Blue 32:108-110.

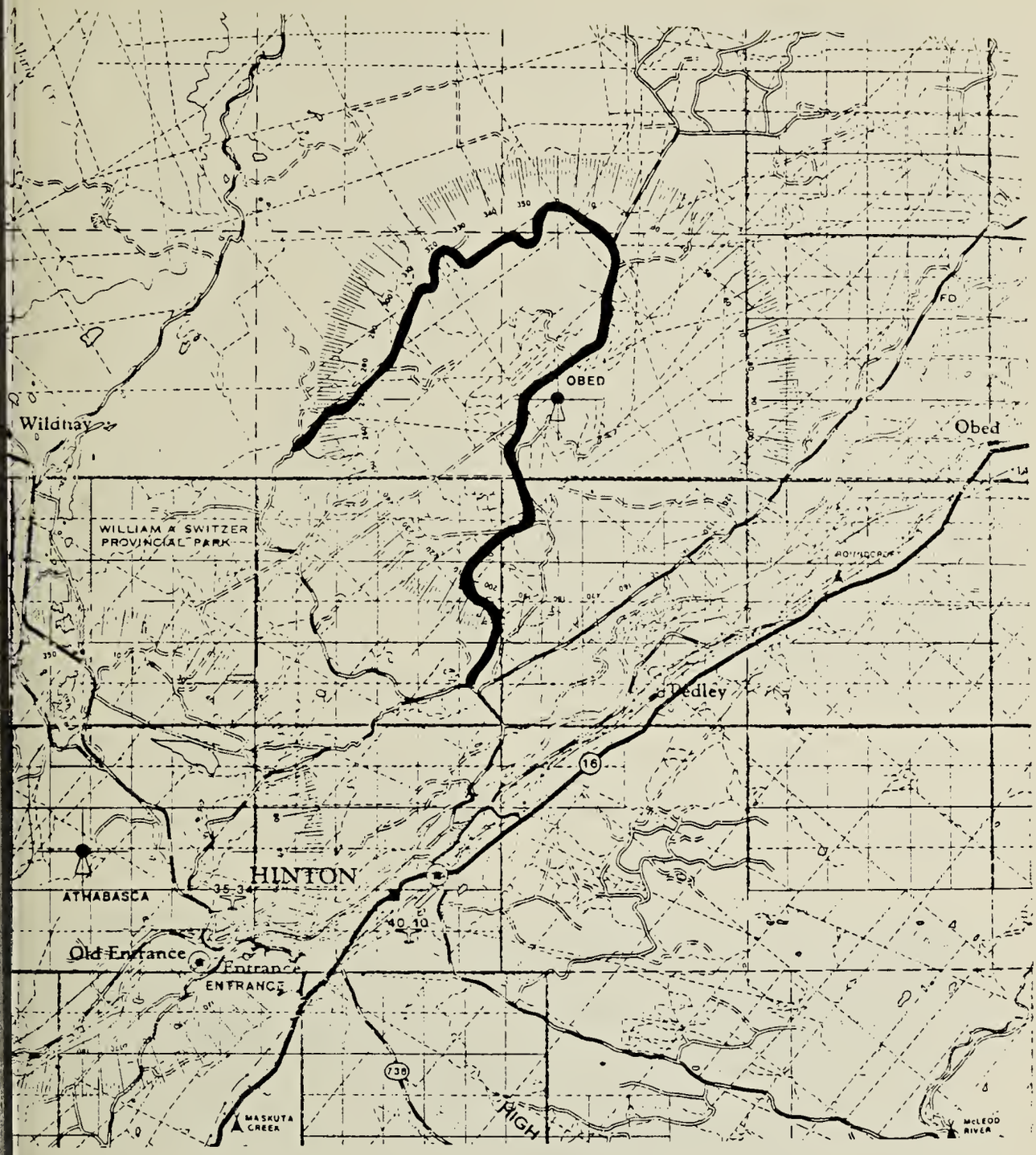
[6]SCOTT, Lorne. 1974. Indian Head blu trail. Blue Jay 32:107-108.

Table I

Species	Number of Boxes Used		
	May 20	*June 4*	*Oct. 27*
Mt. Bluebird	5	9	2 (dead you
Tree Swallow	—	2	1 (eggs)
Red Squirrel	2	4	12*
Deer Mice	1**	—	3**

*Red Squirrels completely destroyed the boxes by gnawing at the plywood.
**The nests were removed and the mice captured.

Note: Wind damage or faulty construction also affected eight nesting boxes.



ALGARY BLUEBIRD TRAIL — 1976

OLD W. PINEL, 1017 — 19th Ave. N. W., Calgary, Alberta T2M 0Z8

the spring of 1976, the Calgary bird Trail was again prepared for upcoming nesting season. The ing boxes were cleaned out, yed with a creolin solution, and ired or replaced, as required. box was checked and the con- recorded four times between third week in May and the first in August. For the first time, a ber of Mountain Bluebirds and Swallows were banded.

Of the 400 boxes, 55 were vandalized before nesting began, 6 after nesting started and only 9 were unoccupied on all visits, leaving 330 boxes used by birds. Excluding the 55 vandalized before the nesting season, 95.7% of the available nesting boxes were occupied. There were 425 bird nests and 1 Deer Mouse nest in the 330 boxes, some houses being used up to four times.

Table 1 analyzes the nesting success

Table 1. Summary of Nesting Success by Species, Calgary Bluebird Trail, 1
(Numbers in parentheses are losses from the previous stage.)

Species	*Nests*	*Eggs Laid*	*Eggs Hatched*	*Young Fledged*	*Young*
Mountain Bluebird	72	374	326 (48)	314 (12)	3
Tree Swallow	249	1433	1194 (239)	1115 (79)	11
House Sparrow	100	434	135 (299)*	9 (126)*	
House Wren	2	12	10 (2)	10 (0)	
Boreal Chickadee	2	12	12 (0)	12 (0)	
Totals	425	2265	1677 (588)	1460 (217)	14

*Destroyed by author.

and losses for 1976. The average clutch size for Mountain Bluebirds was 5.19 and the Tree Swallows 5.76. In 43 nest boxes there were two or more broods by the same species -25 were House Sparrows, 15 Mountain Bluebirds and 3 Tree Swallows. Different species nested in the same box 36 times, as follows: sparrow then swallow, 12; sparrow then wren, 1; sparrow then blubird, 1; swallow then sparrow, 2; bluebird then swallow, 19; bluebird then swallow then bluebird, 1.

The total losses for all species from egg-laying to young leaving the was 805 (35.5%) of which 425 (18 were House Sparrow losses du destruction by the author. Losse the other species were mainly result of competition and egg i tility.

In 1976, 693 birds were bande which 84 were Mountain Blue and 609 were Tree Swallows. Thi the first year that Boreal Chicka used the nest boxes. The ne success in 1976 was similar to th 1975 with a decrease of 9 fle young in 1976.

Mountain Bluebird on nest Gary W

IRST CONFIRMED GREEN HERON OR SASKATCHEWAN

OBYN DONISON, 154 Millar Crescent, Regina, Saskatchewan S4S 1N4

At approximately 11:35 a.m. on ay 20, 1975, as I was working on my ascana Waterfowl Park Nesting rvey, I approached the Regina werhouse "Spillway" on Goose and and suddenly saw a small (19± ches), strikingly marked, bittern-aped heron. It was no more than 30 et away when I stopped. It studied e as carefully as I studied it. The bird d a dark green vest, deep chestnut own neck with a white line of thers running down the middle; its descent blue-green back shone en on that cloudy day and its wings d tail had a green-brown tinge mpared to the blue back. The bird d grayish underparts. From the ck-tipped yellow bill and yellow es to the bright orange legs it was e of the most beautiful birds I had en seen. After about half a minute, raised its crest, flicked its tail, uatted, spread its wings and took . It flew over the spillway and land- far out on North Goose Island ong some willows.

then rushed to phone Fred Bard, scribed it to him and he agreed it s a Green Heron. I then contacted d Lahrman, Frank Brazier and ner Fox, who came out immediate- We found the bird on North Goose nd. A few minutes later it flew m island to island over the marsh. appeared all dark except for the ling bright orange legs. The flight s quite rapid with its broad 3-foot ngs beating slowly, about the same e as a crow, but with more arched ngbeats. That afternoon Dwayne rty and I went down to photograph bird. We took three pictures, but y one shows the markings well ough to identify it as a Green ron, the first confirmed record for katchewan.

t was seen through the rest of May d by one other observer, Thomas veridge. It seemed to favour the lway pipes for shelter. The last

Green Heron Dwayne Harty

May observation was on the 31st by myself. It was found again on June 21 and August 17. In August its legs were a greenish-yellow rather than a bright orange and its plumage was a bit duller. I thought it might be a different bird, but all my birdbooks state that the legs turn a greenish-yellow in the fall and winter. A Green Heron was seen again on September 6 and 7.

Green Herons breed regularly on the west coast and across the south-central United States and from Ontario south through Central America.[3] They have not been reported from Alberta, their status in Montana is uncertain, they breed sparingly in North Dakota, and in Manitoba, apparently the only recent record is of one at Delta in June, 1967.[6 7 8 2]

The Green Heron is listed as a hypothetical straggler for Saskatchewan and the only two records are for one near Radville, 80 miles southeast of Regina, on June 22, 1966, and one by Frank Brazien just south of Regina on June 12, 1971.[1 5 4]

I would be interested in hearing of any other Green Heron records for Saskatchewan.

[1]Anonymous. 1969. Field check-list of Saskatchewan birds. Saskatchewan Mus. Nat. Hist., Regina. 4 p.

[2]EVANS, R. M., and R. W. NERO, 1967. Sight record of Green Heron at Delta, Manitoba. Blue Jay 25:184.

[3]GODFREY, W. E. 1966. The birds of Canada. Nat. Mus. Canada Bull. 203. 428 pp.

[4]HOUSTON, C. S. 1971. Northern Great Plains Region. Am. Birds 25:869-872.

[5]MATTHEWS, C. A. 1967. Possible ht of a Green Heron. Blue Jay 25 .

[6]SALT, W. R., and J. R. SALT, 19 birds of Alberta. Hurtig, Ed nt 498 pp.

[7]SKAAR, P. D. 1969. Birds of the B em Latilong. Pub. by author, B m Montana. 132 pp.

[8]STEWART, R.E. 1975. Breeding ds North Dakota. Tri-College Ce r Environmental Studies. Farg N 295 pp.

LOUISIANA HERON IN MANITOB

RICHARD W. KNAPTON, Dept. of Zoology, University of Manitoba, Winnipeg, Manitoba R3T 2N2

On April 18, 1976, a Louisiana Heron was discovered by George Nykulaik in a ditch near the south end of Lake Winnipeg at Patricia Beach, Manitoba. Subsequently, the bird was seen and photographed by many obervers, and was last reported in the same area on April 25.

In the late afternoon of April 19, the heron was observed as close as 15 m away, for about 45 minutes by Rudolf Koes, Paul Goossen, Brain Knudsen, Linda Guse, and myself as it foraged in open water in the ditch. During this time, it was seen to catch two leeches (see figure 1), one of which was apparently taken inside a culvert that the bird frequently entered. It was also reported as striking a partially stranded Carp *(Cyprinus carpio)* on April 18, without actually being seen to eat any of the fish.

This sighting is the first verified record of a Louisiana Heron in Manitoba. Previously, there were three sightings for the province: at Nettley Lake on September 6, 1924[1], at Clandeboye Bay, Delta, on July 10, 1966[2], and near Ross on May 19, 1971[3], but these records were not substantiated by specimen or photograph.

I thank Herbert W. R. Copland for information on the three sightings prior to 1976.

Richard W. K pt

Fig. 1. Louisiana Heron with leech A 19, 1976, Patricia Beach, Manitob

[1]LAWRENCE, A. G. 1924. Ch ka Notes, 183. Winnipeg Free Pr Winnipeg, September 25, 1924

[2]MOSSOP, H. 1966. Chickadee No 601. Winnipeg Free Press, W ni July 23, 1966.

[3]MOSSOP, H. 1971. Chickadee No 850. Winnipeg Free Press, W ni June 19, 1971.

w Gull, Lake Athabasca, June 1960 Fred Lahrman

EW GULL SIGHTING AT EINDEER LAKE, MANITOBA

VIN CUTHBERT, R. R. 1 Box 59, Portage la Prairie, Manitoba RLN 3A1

t 11:15 a.m., DST, on June 29, 1974, uglas R. Storey, a Manitoba ernment wildlife technician, and I erved an adult Mew Gull on a ll rocky island in the Manitoba ion of Reindeer Lake. The island 42' N, 101° 54'W) was ap-ximately 2 ha in size and was used nesting site by 90-100 Common ns. Fifteen Herring Gulls and 16 -billed Gulls were also seen in vicinity of the island.

e Mew Gull was observed under l weather conditions for five utes both at rest and in flight. The r field marks observed were: ler than Ring-billed Gull; short, arked, pale green bill; slightly er, yellowish-green legs; outer aries which contained a more ceable amount of white than the -bills. It appeared relatively tame twice it perched on a tree snag 12 om us, the only gull to do so. It not call during our observations was not seen on subsequent visits e island.

ew Gulls are known to nest in nies as well as solitary pairs. Nests generally on the ground in the ity of lakes or on islands but ng in trees is not unknown. The species, which breeds throughout the southern Yukon, adjacent areas of the Northwest Territories and northwestern and coastal British Columbia, also breeds in northwestern Saskatchewan.[1] Mew Gulls , however, have been reported at several locations in northeastern Saskatchewan, including Reindeer Lake, where sightings go back as far as 1914 when Angus Buchanan collected an adult female and saw another bird on July 9.[3] More recently two or three pairs of these gulls were recorded in June and July, 1965, at a fish-filleting plant at Kinoosao.[3] A male collected there on July 1 had testes measuring 12 mm. Kinoosao, which lies just inside Saskatchewan on Reindeer Lake, is almost 80 km southwest of the island where our observation was made. On July 20, 1965, the same party saw a Mew Gull only 32 km from our sighting, northwest across the Saskatchewan boundary on Reindeer Lake. The species, therefore, could occur throughout much of the Reindeer Lake area, perhaps even on a regular basis, though in small numbers. One could expect a few to overlap into the Manitoba portion of Reindeer Lake and even possibly breed there.

To date, there have been two reports of Mew Gulls elsewhere in the province, both from Churchill. A single bird was seen near the grain elevator on June 23, 1967.[2] It was reported to have remained in the area for a few days and was seen by several other observers. The second Churchill sighting comes from Alf H. Rider of Forest, Ontario, (pers. comm., 1976) who carefully observed an adult bird there on June 10 of that year. This bird was seen in the vicinity of the granary ponds and was notably tame. No specimen has been collected and it is not currently listed under irregular occurrence on the field check-list of Manitoba birds.

I thank Herbert W. R. Copland, Manitoba Museum of Man Nature, and Martin K. McNicho assisting me with information Robert W. Nero who reviewe manuscript and made he suggestions.

[1]GODFREY, E. W. 1966. The bi Canada. Nat. Mus. Canada 203. Otrtawa. 428 pp.

[2]JEHL, J. R. Jr. and SMITH, 1970. Birds of the Churchill r Manitoba. Manitoba Mus. and N Spec. Pub. 1. Winnipeg. 87 pp.

[3]NERO, R. W. 1967. The bir northeastern Saskatchewan, Nat. Hist. Soc. Spec. Pub. 6. R 96 pp.

IVORY GULL AT CHURCHILL, MANITOBA

Steve B

Steve and Josephine Blanich (Box 96, Crosby, Minnesota) observed an Ivory G Churchill daily from June 9 to 12, 1976. In addition, they reported seeing Par Jaeger, Long-tailed Jaeger, Glaucous Gull, Herring Gull, Thayer's Gull, Bonap Gull and about two dozen Sabine's Gulls, as well as 72 other species. Churchill tinues to be a spectacular place to visit to see unusual birds! J. R. Jehl and B. A. S (Birds of the Churchill region, Manitoba, 1970) list the Ivory Gull as hypothetical colour slide from which the above photo was taken provides evidence of it currence at Churchill.

ORY GULLS AT MIEBEN LAKE, SKATCHEWAN

D W. LAHRMAN, Saskatchewan seum of Natural History, gina, Saskatchewan S4S 0B3

While boating and fishing on the rnoon of September 16, 1976 on mieben Lake, Dr. Fred G. Bard nted five pure white dove-like s feeding on a bay of the lake. ee were swimming and two were ering; soon all were on the water ding. Fred eased the boat to approximately 100 yards from them n the gulls flew up and alighted e 30 yards farther away. Here Fred erved them for 15 minutes nout approaching closer.

With the aid of binoculars he could that they were smaller than Ringed Gulls, were pure white except black-tipped flight feathers maries and some secondaries) giva slightly speckled, dark-bordered ct on the wings. He was unable to any colour on the bills or feet but appeared dark. Unfortunately, was out of film at the time and was ble to photograph them. He identd them as Ivory Gulls.

TOR'S NOTE: This is the first report of species for Saskatchewan, although e are at least four records for itoba (Jehl, J. R., Jr., and B. A. Smith. . Birds of the Churchill region, itoba. Manitoba Mus. of Man and re, Spec. Pub. 1, Winnipeg. 87 pp.).

OZEN CRABAPPLES L WAXWINGS

. ROBINSON, Temperance Street, atoon, Saskatchewan

me years ago, while visiting in dow Lake, a local gardiner told of an unusual happening with ect to bird fatalities. He had, in yard, a rather large Siberian apple *(Malus baccata)*. The species has small, usually red, fruits which are commonly less than ¾ inch in diameter. A flock of Bohemian Waxwings was feeding on the crabapples of this tree.

It must have been an extremely cold day in midwinter and the fruits were frozen solid. In three or more instances a Waxwing picked a crabapple and the fruit stuck in the bird's beak. Unable to close their beaks, the cold air injured their lungs and the birds dropped to the ground and perished. The other birds in the flock were either able to swallow the fruits or else they deserted the tree in a hurry. I wonder if other incidents of this kind have been recorded?

PRAIRIE NEST RECORDS SCHEME

The Prairie Nest Record Scheme report for the 1976 nest season is now being prepared and will be available before the end of March.

Persons interested in recording information on bird nests they discover, and becoming contributors to this program, can obtain information, recording cards and a copy of the 1976 report by writing to:

H. W. R. Copland,
Prairie West Records Scheme,
Manitoba Museum of Man & Nature,
190 Rupert Avenue,
Winnipeg, Manitoba R3B 0N2

Contributors or former contributors having nest record cards from past seasons are asked to forward them to the above address as soon as possible. The Canadian Wildlife Service has a program underway to enter data from all cards in the Prairie Nest Records Scheme files into a computer system. For this reason we wish to have as many as possible completed cards returned.

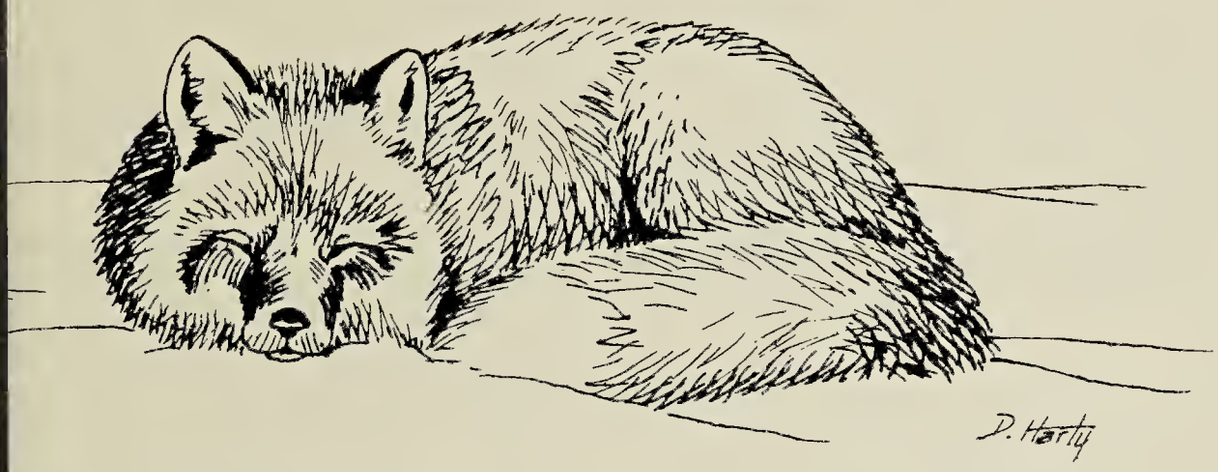
ANIMALS IN WINTER
Drawings by Dwayne Harty

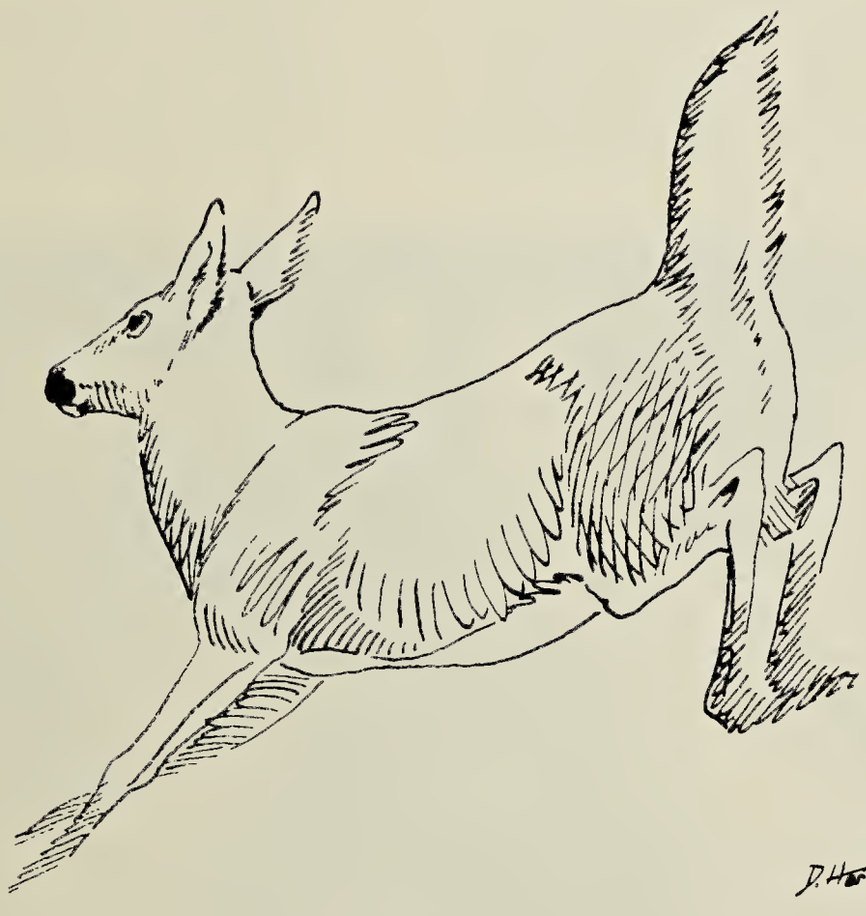
Jack Rab

Weasel

Blue

Fox





White-tailed Deer

SASKATCHEWAN CHRISTMAS MAMMAL COUNT — 1976

Compiled by WAYNE C. HARRIS, Box 93, Raymore, Saskatchewan S0A 3J0

A total of 33 areas recorded 22 species during the count period — an increase of five reporting localities over last year. Several new species were added this year including Elk at two localities, Badger at three and Norway Rat and Pronghorn at one each.

Several species which normally spend the winter hibernating were still active at Christmas — Striped Skunk and Badger. The Badger which relies primarily on rodents and insects for food, may have been stimulated into prolonged activity by the extremely dry fall which resulted in the soil not freezing solid, allowing them to dig into the ground after mice.

White-tailed Jack Rabbits and Snowshoe Hares were very common, with several localities commenting on the large number of Snowshoe Hares present. Snowshoe Hares in particular may be nearing the peak of their population cycle. Coyotes were the m frequently reported species, appe ing to be thriving on the rabbit p ulations.

Conversely the Lynx was reported. Are their populations or are they not moving south of forest because of the high Snowsl Hare populations in the forest wh supply ample food for them ther

For weather, coverage and ticipants please refer to the Christ Bird Counts found elsewhere in issue. Mouse tracks have b recorded under Mouse spp. in table.

Symbols found in the table ar follows:

* Identified by tracks with number of animals by track parentheses.

\+ Seen during the count pe but not on the count day.

H Heard only.

White-tailed Jack Rabbit Lorne S

	Shrew spp.	Red Fox	Coyote	Ermine	Least Weasel	Long-tailed Weasel	Weasel spp.	Mink	Striped Skunk	Badger	White-tailed Jack Rabbit	Snowshoe Hare	Nuttall's Cottontail	Red Squirrel	Beaver	Meadow Vole	Mouse spp.	Muskrat	Norway Rat	Porcupine	Elk	Mule Deer	White-tailed Deer	Moose	Pronghorn	Total Species
Asquith — Dec. 31	—	*	—	—	—	—	—	—	—	—	—	—	—	*	—	—	*	—	—	+	—	—	*	—	—	5
Biggar — Dec. 24	—	1	*	—	—	—	*	—	—	—	*	1	—	—	—	—	—	—	—	1	—	*	*	—	—	8
Duperow-Ruthilda — Jan. 2	—	+	*	—	—	—	*	—	—	—	2	*	—	—	—	—	*	—	—	—	—	*	—	—	—	7
Feudal — Dec. 27	—	—	—	—	—	—	*	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Fort Walsh — Dec. 31	—	—	20	—	—	—	—	*	—	—	—	—	—	87	—	—	—	—	—	—	1	12	15	2	—	8
Gull Lake — Dec. 30	—	—	—	—	—	—	—	—	—	—	*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Harris — Dec. 18	—	—	*	—	—	—	*	—	—	—	*	*	—	—	—	—	*	—	—	*	—	—	11	—	—	6
Round Lake — Jan. 1	—	—	*	—	—	—	*	—	—	—	*	*	—	*	—	—	*	—	—	*	—	—	*	—	—	9
Broadview — Jan. 1	—	*(1)	*(1)	—	—	—	—	—	—	—	—	1	—	3	—	—	—	—	—	—	—	—	4	—	—	6
Duck Lake — Jan. 2	—	—	—	—	—	—	*(2)	—	—	—	—	*	—	H	—	—	—	—	—	—	—	—	*	—	—	4
Emma Lake — Dec. 27	—	—	—	—	—	—	—	—	—	—	—	*(1)	—	3	—	—	—	—	—	—	—	—	*(1)	—	—	3
Gardiner Dam — Dec. 30	—	1	1	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	1	—	—	4
Humboldt — Dec. 25	*(1)	*(2)	1	—	—	—	*(1)	*(2)	—	—	*(6)	*	—	—	—	—	*(6)	—	—	—	—	—	*(4)	—	—	9
Indian Head — Dec. 27	—	1	2	—	*(1)	—	1	*	*(2)	—	1	*(4)	—	2	—	—	*	—	*(1)	*(1)	—	—	8	—	—	13
Kenaston — Dec. 18	—	*	*	—	—	—	*	—	*	—	*	*	—	—	—	—	—	—	—	*	—	—	—	—	—	7
Kindersley — Dec. 26	—	+	1	—	—	—	—	—	—	—	+	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Kutawagan Lake — Dec. 27	—	—	1	—	—	—	—	—	—	—	27	—	—	—	—	—	*	—	—	*	—	—	—	—	—	4
Last Mountain Lake — Jan. 1	—	*	*	—	—	*	—	—	—	*	14	*	—	—	—	—	—	—	—	1	—	—	3	—	—	8
Leader — Dec. 30	—	—	—	—	—	—	—	—	—	—	—	—	6	—	—	—	—	—	—	1	—	3	*	—	—	4
Leader — Dec. 26	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	—	—	20	3
Maidstone Ferry — Dec. 23	—	—	*	—	—	—	*	—	—	—	—	*	—	2	—	—	—	—	—	*	—	—	*	—	—	6
Moose Jaw — Dec. 27	—	*(2)	*(2)	—	*(1)	*(3)	—	—	—	*	*(8)	*(1)	—	—	*(1)	*(2)	—	—	—	—	—	—	—	—	—	9
Raymore — Dec. 26	—	—	*	—	—	—	*	—	—	*	*	*	—	2	—	—	—	—	—	*	—	—	*	—	—	8
Saltcoats — Jan. 2	—	—	*(2)	*(4)	—	—	—	—	—	—	—*(25+)	*(30)	—	—	—	—	—	—	—	—	—	—	*(32)	—	—	5
Skull Creek — Dec. 25	—	—	—	—	—	—	*(2)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Spirit Lake — Dec. 27	—	*	*	—	—	—	*	*	—	—	*	1	—	1	—	—	*	—	—	—	—	—	*	—	—	9
Spring Valley — Jan. 1	—	1	2	—	—	+	—	*	—	—	3	—	—	—	—	—	*	—	—	—	—	—	*	—	—	7
Turtle Lake — Dec. 20	—	—	—	—	—	—	*	—	—	—	—	*	—	3	—	—	*	—	—	—	—	—	*	—	—	5
Waseca — Dec. 29	—	*	*	—	—	—	*	*	—	—	—	*	—	*	—	—	*	—	—	—	—	—	5	—	—	8
Webb — Jan. 1	—	1	1	—	—	—	—	—	—	—	—	—	3	—	—	1	—	1	—	4	—	—	—	—	—	6
White Bear — Dec. 31	—	—	*	—	*	*	—	—	—	—	—	*	*	—	—	—	—	—	—	—	—	15	—	—	—	6
Whitebeech — Dec. 26	—	—	—	*(2)	—	—	—	—	—	—	—	*	—	4	—	—	—	—	—	—	*(1)	—	1	*(6)	—	6
Wynyard — Jan. 10	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Total Counts	1	16	24	2	3	6	15	7	2	3	17	20	4	13	1	1	11	1	1	12	2	6	21	2	1	

THE BIRDS OF ALBERTA

With their ranges in Saskatchewan and Manitoba.

W. R. SALT and J. R. SALT. 1976.
Hurtig Publishers, Edmonton.
512 pp. $10.00

This is the best single volume there is on birds in the Prairie Provinces. The emphasis is on Alberta species — breeding and migration distributions and periods for the more common birds and individual records for rare ones. However, the breeding ranges of Saskatchewan and Manitoba species found in Alberta are also given on small but adequate maps and the boundary localities are usually named in the text. In addition, there is a paragraph on plumage, on field identification, on nesting (site, material, clutch size and egg colour), on range (world-wide and wintering) and a section on habits, ecology and migration — for a total of one page of text per species. There is also an excellent half-page colour photo or painting of each species.

Presumably because the junior author, the geographical scope and the publisher are new, the text makes no reference to two earlier versions of The Birds of Alberta.[8 9] However, comparisons are appropriate; even the publisher's advertisement points out that 258 of the photographs are new from the second edition. This book lists 333 confirmed species, including four substantiated for the first time in the fall of 1975; this is 12 more than in 1966 — allowing for species that recently have been officially combined into one and split into two. One species — Long-tailed Jaeger — has been relegated to the Hypothetical List. The print is slightly smaller, permitting the inclusion of material for two additional provinces in the same space as before. Most of the text is new. Instead of giving only an average figure for length, the new volume gives a range and repeats it in metric units.

There has been no skimping on the species covered by maps, e.g., there is but one record of a Scarlet Tanager in Alberta but a map with its bree range in southeastern Manitob given. It is difficult to evaluate r maps, if only because one author terpretation of occurrence betv widely scattered documented rec may be as good as another's. W new published and unpublished has undoubtedly been incorpor the Saskatchewan and Mani ranges are apparently drawn described from Godfrey, for the part.[2] However, Saskatche readers should find that at least species breed beyond the ra shown for their province: breasted Mergansers nest 150+ further southwest to just nort Meadow Lake,[1] Nashville War breed farther west at Nipawin River, and about 100 miles nor Meadow Lake, [4 7 6] and Ca Warblers breed south to near sack.[10]

Because the area has been exp ed, the status of a species no l appears at the top of each speci count. Gone also are the "scarce" to "common" in breeding ranges.

This reviewer agrees with tw jor criticisms made in both e reviews of the Birds of Alberta absence of reference material t stantiate records and the inclus a check-list of subspecies.[3 5] I also question the value of the ing paragraph (except measurements) describing plu The authors admit that the book a field guide. Beginners w frustrated trying to learn thei from it but, if they try, they w more out of the illustrations th text. Unfortunately, the rea given no advice on what to u identification because there reference to field guides. N there references to The Bi Canada or to any of the regio or societies where help and information could be obtaine

With the report of a Canyor in the Milk River Valley, I wou expected to see this species Hypothetical List.[11] More purchasers are being supplied

rrection slip for the two photos on ge 478, where the captions have en reversed.

n view of the problem of locating ce names, it seems unfortunate t the maps inside both front and k covers are identical. One might e been crammed with the more portant place names and the other h ecological zones, lakes, rivers, . There may be a place-name error der Sharp-tailed Sparrow (p. 448): press Lake is listed as being in cen- Saskatchewan and is not included he species' breeding range.

hat the shortcomings of the book not serious is evident from the that I have personal copies at me and in the office and gave two Christmas presents. *J. B. Gollop,* 2 York Ave., Saskatoon, Sask. S7J

DFREY, W. E. 1950. Birds of the ypress Hills and Flotten Lake Regions, askatchewan. Nat. Mus. Canada Bull. 20. Ottawa. 96 p.

[2]GODFREY, W. E. 1966. The Birds of Canada. Queen's Printer, Ottawa. 428 p.

[3]HOUSTON, C. S. 1959. The Birds of Alberta (Review). Blue Jay 17:43-44.

[4]HOUSTON, C.S., and M. G. STREET, 1959. The birds of the Saskatchewan River — Carlton to Cumberland House. Sask. Nat. Hist. Soc. Publ. 2. Regina. 205 p.

[5]NERO, R. W. 1967. The birds of Alberta, revised (Review). Blue Jay 25:41-43.

[6]RANDALL, T. E. 1962. Birds of the Kazan Lake region, Saskatchewan. Blue Jay 20:60-72.

[7]RAWSON, D. S., E. C. HOPE, J. MITCHELL, and E. W. TISDALE, 1943. The Big River Survey. Univ. Saskatchewan, Saskatoon. 37 p.

[8]SALT, W. R., and A. L. WILK, 1958. The birds of Alberta. Queen's Printer, Edmonton, 511 p.

[9]SALT, W. R. and A. L. WILK, 1966. The birds of Alberta. Queen's Printer, Edmonton. 511 p.

[10]Saskatchewan Museum of Natural History. 1956. Birds of Madge Lake. Blue Jay 14:53-54.

[11]SMITH, W. W. 1972. Milk River valley, Alberta, brief explorations. Blue Jay 30:49-51.

A SECOND LOOK, by Liz Roley, 1976, 91 pp., paper, illus. b.w. drawings by Molly Lawrence, $3.00. For 20 years Liz Roley has charmed and delighted readers of the Regina Leader-Post with her Nature Notes. The best of these have been gathered into a book so that many others can get the benefit of her perceptive and reverent eye. Mostly birds, but also many other aspects of nature around Regina and in the Qu'Appelle Valley, are captured for us less well-endowed folk.

TWO NEW PUBLICATIONS HAVE BEEN ISSUED BY S.N.H.S: No. 8 BLUE JAY INDEX 1961-1969 (Vols. 19 to 27) by Patricia O'Neil $3.00; No. 9 BIRDS OF THE ROSETOWN-BIGGAR DISTRICT, SASKATCHEWAN by Wayne E. and Don H. Renaud $4.00. Other S.N.H.S. Special Publications still in print are: No. 4 BLUE JAY INDEX 1942-1960 by Joyce Deutscher $2.00; No. 5 BIRDS OF THE LAKE ATHABASCA REGION, SASKATCHEWAN by Robert Nero $2.50; No. 6 BIRDS OF NORTHEASTERN SASKATCHEWAN by Robert Nero $2.00; No. 7 BIRDS OF MOOSE MOUNTAIN, SASKATCHEWAN by Robert Nero and Ross Lein $2.00.

THE BIRDS OF ALBERTA by W. Ray Salt and Jim R. Salt, 1976, 498 pp., 303 col. illus., 13 b.w. drawings, 288 maps, 5½ x 8½, $10.00. A totally new book with an entirely new, updated and expanded text covering 329 species. Range maps include Saskatchewan and Alberta.

BIRDS OF CANADA by W. Earl Godfrey, 1966, 428 pp., 69 col. pl., 71 drawings, 2 maps, latest reprint $17.50. This is a must for every North American birder as it describes every bird ever found in Canada up to 1966. The dust jacket photo is by Richard Fyfe. See the enthusiastic review by Dr. R. W. Nero in the *Blue Jay* March 1967, p. 39 — recommended.

THE BIRD WATCHER'S BIBLE by Geo. Laycock, 1976, paper, 7¾ x 10¼, illus. col. b.w., $3.25. A comprehensive guide for birders, incl. attracting and observing birds, photography, equipment, ecology, vacation places for birding, where to find birds in all the States, etc.

BIRDS OF THE WEST COAST (Vol. 1) by J. Fenwick Lansdowne, 1976, 173 pp., 10½ x 14½, text by the artist. The long-awaited fourth book of Canada's outstanding bird artist contains 52 magnificent full-colour paintings and 53 of his sketches. $40.00.

BREEDING BIRDS OF NORTH DAKOTA by Robert E. Stewart, 1975, cloth, 295 pp., 8½ x 11¼, illus. habitat photos in col., paintings of species by Roger T. Peterson and Walter Weber, b.w. photos, 2 maps, species range maps. A tremen amount of painstaking field work compilation have given us a complete ture of the distribution and abundan N. Dak.'s breeding birds, $18.50.

BIRDS OF CALIFORNIA by Arnold S 1974, 334 pp., over 300 b.w. photo col.), cloth, $12.50 US. An anno checklist of over 500 species and a di sion of the birds of each of 25 habi truly comprehensive and up-to-date on this popular place for vacati prairie people.

BIRDS OF ARIZONA by A. Phill Marshall, G. Monson, 1964, 212 pp., 126 range maps, highlighted with 12 c sketches by Geo. Miksch Sutton a photos in col. by Eliot Porter. Sutto Porter provide that sumptuous touc fine guide to more than 400 sp Arizona is another mecca for vacati prairie people. $17.50 US.

BIRDS OF THE WORLD by Oliv Austin, illus. Arthur Singer, 1961, 31 10 x 13¾, $16.00. Long unavailabl spectacular presentation of the families of the world is enriched wi col. paintings, showing over 700 sp Among the best of its kind, we have a stock.

BENT'S LIFE HISTORIES OF N AMERICAN BIRDS, Dover reprin vols. The complete set should be in birder's library. Details on request.

CROWS OF THE WORLD by Goodwin, 352 pp., 3 col. pl., 114 dra 8¼ x 11¼, $28.50 US. The divers successful group of corvids varies wi colour, size and behaviour patter author has had a rich personal expe with them and covers the g characteristics of the 116 species, synopsis of the behaviour and bio each.

HUMMINGBIRDS by Walter Schei 1967 Eng. trans. from Ger., 176 pp., illus. 76 magnificent col. pl., $49.50. noisseur of these flying jewe Scheithauer has kept them in capti study and photography. His work h ed many problems and his color have to be seen to be believed. Lo of print, we have one copy.

PRAIRIE BIRDS IN COLOR by Gilroy, 1976, 116 pp., 8½ x 9, 154 $9.95 paper, $14.95 cloth. A grea panded version of the author's "An of Prairie Birds", this book conta beautiful colour photos of 92 birc picture is accompanied by brief d tion of the bird, its habits and habi details of the photo method. A tr

THER NATURAL HISTORY BOOKS

ILDFLOWERS ACROSS THE PRAIRIES by enton Vance, James Jowsey and James cLean, 216 pp., 422 col. pl., 200 drawings, ftcover $8.95. Promised for Feb. 1977, we ave all been looking forward to this ook.

HE CARNIVOROUS PLANTS by F. E. yd, 1942 (1976 Dover reprint), 352 pp. il- s. b.w. drawings, $5.25. Only increasing reputation since its first appearance in 42, this book is the definitive study of e plants which capture and digest animal ey. This thorough and scholarly work vers 450 species.

EXPERT WITH MAP & COMPASS by orn Kjellstrom, 1976, 214 pp., profusely us., $8.25 (incl. kit with practice compass, c.). The complete orienteering hand- ook appears in a new enlarged edition. e sport of orienteering is just the thing outdoors groups looking for a new me.

RIENTEERING by John Disley, 170 pp., 67, profusely illus., paper $3.95. The pular European sport of orienteering is ading this country. A walking road rally at requires compass and map, it provides mething for everybody. An ideal out- ors sport for natural history groups.

ere are five titles in the growing number of books describing the wild food available free all around us:
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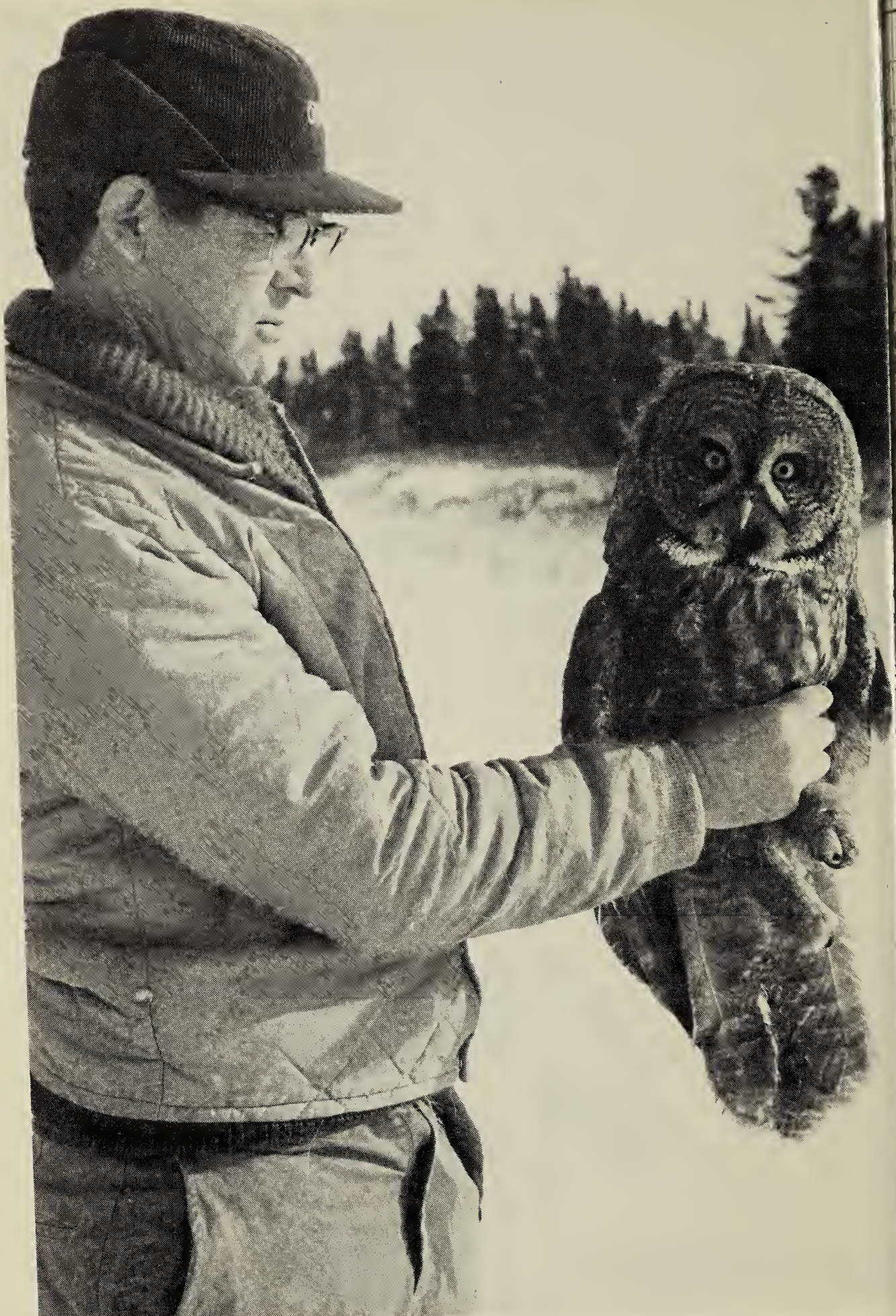
THE LAST REFUGE by J. G. Nelson, 1973, 230 pp., cloth, $8.50. An ecological history of the northern plains, 1750-1885. Emphasizes the landscape change and lasting, destructive effects on wildlife and Indians of our economy: fur trade, mining, ranching, farming, and the railroad. The last refuge is the Cypress Hills.

FLUCTUATIONS IN THE NUMBERS OF THE VARYING HARE by D. A. MacLulich, 1937, (reprinted), cloth, $9.50. Mammalogists will be glad to know that this classical work is again available.

The above are just a few of the hundreds of natural history titles we have in stock or are available from the publishers. Your inquiries are invited, but please specify your field of interest. REMEMBER: S.N.H.S. MEMBERS ARE ENTITLED TO A 10% DISCOUNT OFF ALL LIST PRICES!

d Squirrel



Robert R. Tay

Robert W. Nero and Great Gray Owl: this Great Gray Owl was banded and released
of Winnipeg in the winter of 1968-69 as part of a study being made there by Dr. Nero
Nero is now writing a book on the Great Gray Owl.

HANKS, BOB

n the March 1956 issue of the *Blue* a special section of "Museum es" was inaugurated, and the ne of Dr. R. W. Nero, the new stant director of the Saskatchewan seum of Natural History, first came the attention of the journal's ders. That date marked the begin- of 21 years of continuous service ne *Blue Jay,* a connection formally ninated last fall when Bob resign- rom the editorial staff. No one has a longer association with the *Blue* n an editorial capacity, and it will extremely difficult to replace him. ough Bob will no longer be listed n assistant editor, the *Blue Jay* sumes to hope that from his nitoba base he will continue to en- rage the reporting of natural ory observations by many kinds of ple, professional and amateur. le we look forward to further tributions from Bob, this seems an ropriate time to say a special nk you" to him for his long and l service in the past.

reader in a reminiscent mood has just reminded us of all the articles on birds and mammals that Bob himself has contributed to the *Blue Jay.* When he worked at the Museum in Regina or Winnipeg he saw it as part of his professional responsibility to publicize what was being learned about the local fauna. Articles on the distribution in Saskatchewan of species like the Kangaroo Rat, Short-tailed Shrew, Pocket Mouse and Silver-haired and Hoary bats, alternated with others reporting the rare occurrence in the province of birds like the Arctic Tern, Williamson's Sapsucker, Red-bellied Woodpecker and Golden-crowned Sparrow. More than two columns in the *Blue Jay* indexes are devoted to the titles of notes and articles by R. W. Nero. But even more important, he instilled in *others* a sense of the importance of recording observations and of reporting them. From the first, Bob was an ardent fan of the *Blue Jay's* founding editor, Isabel Priestly, a scientist with the same rare capacity of sharing her informed awareness with others.

ing Grosbeak

Dwayne Harty

HOW THE BLUE JAY GOT ITS NAME

The beginnings of the *Blue Jay* read like a fairy story. Let me tell it from the vantage point of a boy who was there.

More than half a century ago, World War I interrupted a young woman's botanical studies in England, Germany and Switzerland. Instead of completing her research studies after the war, Isabel M. Adams married a young Canadian soldier, Robert J. Priestly, on New Year's eve of 1918, and came to live in Canada. After residence in Calgary and Victoria, the young couple moved to Winnipeg in 1929, where Bob was desk editor with the *Winnipeg Free Press.* Isabel joined the botany section of the Manitoba Natural History Society, but discovered on society outings that members of the ornithology section, led by A. G. Lawrence, seemed to be having more fun. Mrs. Priestly began the study of birds as well as flowers, and continued both after moving to Yorkton in July 1935.

The following year, a nine-year-old boy in Yorkton received a copy of *Birds of Canada* by P. A. Taverner for his birthday. Two aunts had joined together to buy it, for three dollars was an unheard-of amount to spend on one book in depression times. Three years later, the boy encountered some birds he could not identify from the book. His father suggested that the boy go to see Mrs. Priestly, now co-author of the weekly "Wild Life Corner" column in the *Yorkton Enterprise.* Mrs. Priestly at once recognized that he was describing immature American Goldfinches, which in fall look very different from the adults depicted in the Allan Brooks' painting in Taverner.

The next spring, the boy and several of his friends began regular weekly hikes around the "muskeg" on the western outskirts of Yorkton with Mrs. Priestly. After two years, Mrs. Priestly suggested that they type up a list of the species they had seen on these walks. The boy enthusiastically offered instead mimeograph the list, for he had lear ed to type while immobilized with fractured ankle in grade 5, and now grade 9 was the operator of a sm mimeographing business that print the Rotary Club's weekly bulletin.

Mrs. Priestly decided to include a ditional records of interest within thirty-mile radius, with son historical notes from John Gunn Spirit Lake and from Frank Baines Crescent Lake. The list w mimeographed in July 1942, with "run" of 75 copies, thought by M Priestly to be three times as many were needed. But she hadn't count on her old friend, A. G. Lawrence Winnipeg, who received a court copy of the rather pathetic little fi page list of 193 possible and hypothetical species. "Chickad Notes" #1,114 on July 31 featured Yorkton list and advised readers send 10¢ for a copy, "a model other clubs and for isolat observers."

Since Mr. Priestly was justly pr of his wife, and also happened to the Yorkton representative for *Regina Leader-Post* and the *Sas toon Star-Phoenix,* a long news st in both papers told of the pr showered on Mrs. Priestly by the pert from Winnipeg. Further requ for the list poured in and a reprin became necessary.

Many purchasers of the list w back to Mrs. Priestly. Judge Lou McKim of Melville sent a substa list of additional species; and Will Niven of Sheho, also at the edg the Yorkton area, sent other c ments. Maurice G. Street of Nipa and Steve A. Mann of Skull C wrote long letters to disc differences between the birdlif the north and southwest, respec ly, and that of the Yorkton area.

Mrs. Priestly decided that t observations, too, should be tributed. She considered fir round-robin mailing of such let

s. Isabel M. Priestly, born July 23, 1893, wbury, Berks., England. Died April 23, 6, Yorkton, Saskatchewan. Named as e of 23 outstanding Canadian women logists by Lorraine C. Smith, "Canadian men Natural Scientists — Why Not?", n. *Field-Nat.* 90: 1-4, March 1976.

the boy suggested that these, too, ld be mimeographed. Mrs. Priest- hen conceived the idea of an an- l birdwatchers' newsletter and ided that such a project would uire a society to back it.

he organization meeting to dis- formation of a new society was d September 11, 1942 at a private he with eight people present. re were only four adults — Mrs. J. oreman, Miss Ethel Lloyd, J. Tepas Mrs. Priestly. Harvey Beck, a high ool student just entering Grade 10, elected temporary chairman. A de 9 student, Vernon Barnes, de the motion that a Natural ory Society be formed. The boy named secretary-treasurer. The only student not elected to office was Ray Adams, then in grade 7. Harvey Beck and Vernon Barnes became directors, together with Ethel Lloyd, and Mrs. Prietsly was President of the new society.

The first proposal was to name the society the Northeastern Saskatchewan Natural History Society, for the *Yorkton Enterprise* referred to Yorkton as the hub of "Northeastern Saskatchewan", the most northeasterly settled area of the province. Mr. Jack Tepas strongly insisted that Yorkton was in the southern third of the province. Others wanted to call it the Saskatchewan Natural History Society, but Mrs. Priestly was sensitive to the fact that a Regina Natural History Society had been in existence for many years. By exclusion, the society became the Yorkton Natural History Society.

No time was lost in holding an executive meeting on September 15, to draft a circular which was mailed on September 17 to 63 prospective out-of-town members. The membership fee was quoted at 25¢ per year and a first issue was promised in two weeks time! The minutes of that first executive meeting noted that "as the allotted time was up, the meeting adjourned." In those days, high school students had to get to bed early!

The minutes of both meetings and the circular itself all failed to mention the name of this projected quarterly bulletin. However, the first issue in October carried the name *Blue Jay* on the masthead. Only in the fifth issue (Vol. 2, No. 1), did Mrs. Priestly explain that the name was chosen because " 'Sammy Jay' was the 'roving reporter' of the Burgess Bedtime Stories world." It was her hope that the *Blue Jay* magazine would carry nature's message throughout Saskatchewan even as the blue jay in the Burgess stories carried news to all the birds and animals of the Green Forest and the Green Meadows.

Not surprisingly, the second annual meeting of September 24, 1943, showed a deficit of $9.40 on expenditures of $59.50 during the first year of

operation. The minutes of that meeting noted that "a rather heated discussion then took place on the matter of raising the membership fee. It was pointed out that they could not be raised this year, as members had been informed in the *Blue Jay* that the fees would remain the same for the coming year." The membership fee was raised to 50¢ one year later, even though the society had a balance on hand of $12.71 after voting a $10 honorarium to the secretary-treasurer, and purchasing a $4.75 book as a token of their appreciation for Mrs. Priestly's work as president and editor. The benefits of an enlarging membership were becoming evident.

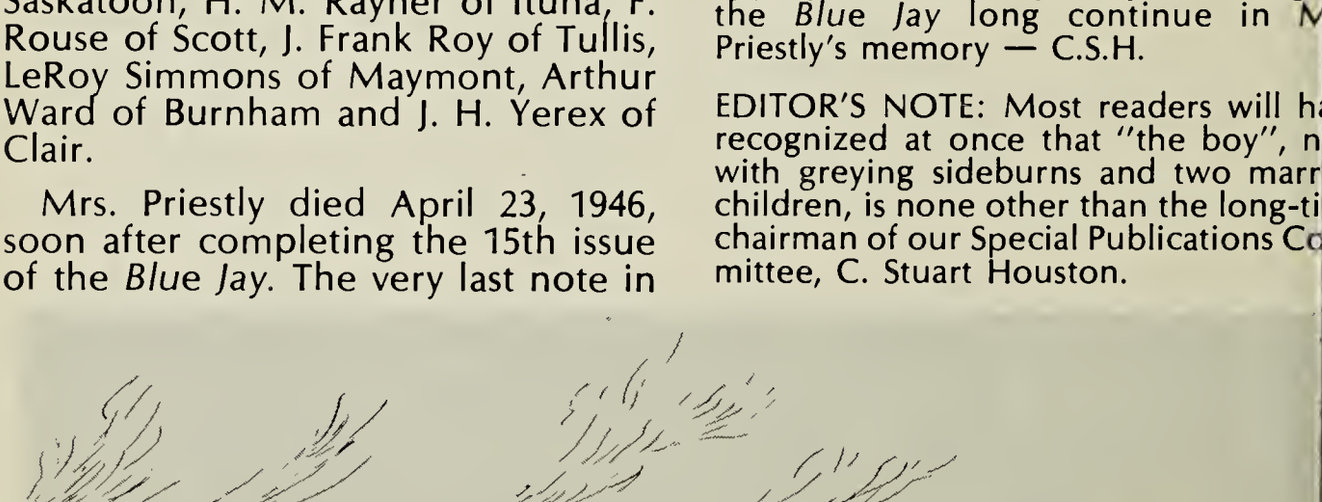
The *Blue Jay* made contact with people from all over Saskatchewan, most of whom didn't realize how many shared their interests. In addition to the names already mentioned, out-of-Yorkton contributors to volume 1 of the *Blue Jay* were: Dick Bird of Regina, Mrs. C. W. Cates of McLean, E. P. Coe of Wawota, H. Downing of Moosomin, R. M. Ferrie of North Battleford, John R. Garden of Wolseley, Mrs. John Hubbard of Grenfell, Miss E. Jones of Raymore, Dr. R. W. Kirkby of Prince Albert, Mrs. Marion Nixon of Wauchope, W. J. Orchard of Regina, Laurence B. Potter of Eastend, Dr. D. S. Rawson of Saskatoon, H. M. Rayner of Ituna, F. Rouse of Scott, J. Frank Roy of Tullis, LeRoy Simmons of Maymont, Arthur Ward of Burnham and J. H. Yerex of Clair.

Mrs. Priestly died April 23, 1946, soon after completing the 15th issue of the *Blue Jay*. The very last note in her diary was for April 8, 1946, follows: "Lovely morning. Walke out along the tracks to pond on we road. Meadowlarks singing, junc everywhere, blue jays around the trees. Ponds frozen over, no ducks red-wings, just one Brewer's. On w home, heard a Blue Jay singing."*

Who would have predicted, fro its shaky start depending on a co catentation of improbable ci cumstances, that the *Blue Jay* wou develop quickly into a respected ar widely circulated regional public tion, the envy of many other areas this continent? Its ability to repo scientific data of importance, whi maintaining popular interest, is heritage from Mrs. Priestly, and t tradition has been continued by h successors, Cliff Shaw, Lloyd Ca michael, George Ledingham, Bo Nero, and Bernie Gollop. A few pe ple of unusual talent and dedicati have thus made the *Blue Jay* a succe Our best wishes go forward to t new editor, Gary Seib, to carry on t tradition.

*As A. C. Bent says: "Comparatively f observers are familiar with the song of t blue jay . . . his quiet solo . . . is a potpou of faint whistles and various low, sw notes, some in phrasing and pit suggesting a robin's song — a mockingb might be singing, *sotto voice*." What appropriate last entry! May the "song" the *Blue Jay* long continue in M Priestly's memory — C.S.H.

EDITOR'S NOTE: Most readers will h recognized at once that "the boy", n with greying sideburns and two marr children, is none other than the long-ti chairman of our Special Publications Co mittee, C. Stuart Houston.



Fred Lahrn

ANADIAN CONFERENCE OR NATURE

The Saskatchewan Natural History ciety will be hosting the annual eting of the Canadian Nature deration in Regina the week of gust 22-27, 1977. There will be a nposium on August 25-26 with the me *Nature and Change on the nadian Plains,* field trips, a ban- et, and a business meeting. A ailed brochure will be mailed to all mbers with the May Newsletter.

HS SUMMER MEETING

he annual summer meeting will be d at Yorkton and Good Spirit Lake vincial Park on the weekend of 10-12, 1977. Members wishing e information on the park area urged to read *Exploring the nes,* Popular Series No. 14, lable for 10¢ from the Museum of ural History, Wascana Park, na, Saskatchewan S4S 0B3.

Sandhill Cranes — Fred Lahrman

KATCHEWAN TURE ART

e Canadian Nature Federation is ing its annual meeting in Regina e August. To provide an oppor- y for Saskatchewan nature artists articipate in this event, the eums — Heritage Branch, rtment of Culture and Youth are onsoring a special exhibit of e art in the Museum of Natural ry from August 25 to September 977.

katchewan artists are invited to it works adhering to the follow- ules of entry:

Open to Saskatchewan residents nly
Works must be of native flora and una
mit of two works per artist
Maximum size 30" by 40"
ll works must be framed ready r hanging
6) Works of art may be delivered in person or shipped labelled "Saskatchewan Art", Museum of Natural History, Wascana Park, Regina, Saskatchewan S4S 0B3. Attention: J. Pickering.
7) All shipped works must be crated
8) Deadline for entry is June 30, 1977
9) Deadline for receiving works of art is July 31, 1977
10) One official entry form must be attached to the back of each work
11) A brief (50 word) biographic sketch of the entrant to be submitted by the artist.

Fifty works will be selected for display by a panel of three judges. The art is for exhibit only, not for sale. All entrants will be notified by mail as to the judges decision, and all works will be insured during the exhibit and to the time of return to the exhibitor.

ROCKY MALLARD

In September, 1976, our neighbour, Jack Bloye, was harvesting. Several times he noticed a lone duck which flew up as he approached. One day he decided to investigate why a duck would stay day after day in the same spot. Lo and behold! He found her nest. There were no eggs — but instead there were two, highly polished stones, no doubt polished from weeks of sitting.

Have you ever heard of such a thing? *Laura Wright,* Box 34, Bracken, Saskatchewan S0N 0G0

MORE HUMMINGBERRIES?

With regard to Mrs. Webb's letter on page 255 of the December, 1976, *Blue Jay* concerning a hummingbird removing juice from a raspberry, I would like to add a short note.

We too grow raspberries and frequently have hummingbirds in our garden. The raspberries are in a part of the garden which is not readily observed and we usually see the hummingbirds much closer to the house. I have at times seen hummingbirds disappear in the general direction of the raspberries. I have also noted that small numbers of our raspberries have dried up complete for no apparent reason.

I must stress here that since I ha not actually observed hummingbir "at work" on our raspberries, M Webb's observation provides o one possible explanation for d dried up berries. Some defin observations would be require After all, the recording of this activ requires the presence of three thin A raspberry patch, a hummingbird and an observer! *Richard L. Coult* Bentley, Alberta T0C 0J0.

PRAIRIE RATTLESNAKE

I am currently conducting resea on the ecology of the Prai Rattlesnake in Saskatchewan a Alberta. I would like to determine factors which limit the distributio this reptile.

I have completed one summ work and have located a numbe dens along the Frenchman, Bow, and South Saskatchewan river would appreciate hearing from *Blue Jay* readers that have knowle of rattlesnake or bullsnake den these two provinces. Your help wo be gratefully appreciated. *Victor C non,* Department of Biology, Uni sity of Regina, Regina, Saskatche S4S 0A2.

Prairie Rattlesnake

Gary W

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